

# THE AUTOMOBILE

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## Tragic Death of Count Zborowski.

Photographic Details of the Fatality on the La Turbie Course, April 1, Obtained by Special Representatives of "The Automobile"—Results of the Fearful Impact of the Mercedes Car on Wall of Rock Graphically Displayed.

THE fearful effects of the impact of the Mercedes car driven by Count Elliott Zborowski, on the wall of rock on the La Turbie course are displayed more forcibly in the accompanying photographs than in anything that could be written. The condition of the machine is seen very clearly in the reproduction of the photograph on this page. The front axle and wheels have apparently been carried away, and the bent pump handles and broken spring give one an idea of the forces involved. The radiator seems almost intact, being protected by the forward extensions of the frame. The steering wheel rim and all the spokes, save one, are stripped, probably by contact with the body of the driver before he was dashed headlong against the rock. The control levers at the side are bent to an acute angle and it is not so apparent how this was brought about. In another photograph, taken immediately after the collision, the body of Count Zborowski is seen lying on the ground to the right of and some distance from the machine. At the extreme left of this photograph the legs and feet of Baron de Pallange show the position in which he lay. He was not instantly killed, and was carried to Nice, where he expired several hours later.

In another photograph Count Zborowski is shown at the wheel of one of the big Mercedes racers. This is apparently not the machine he drove to his death, but another car, probably used in some of the preliminary races. The photograph shows Count Zborowski as a man of athletic build and fine countenance. He was the beau ideal of a sportsman and an automobilist of proven skill and courage.

It is probable that his tragic death, coming after that of the German automobilist, Wilhelm Bauer, at the same spot, two years ago, will stop racing on the La Turbie course for all time.

The terrible accident, occurring at the



Photo by Branger & Doye.

COUNT ZBOROWSKI'S MERCEDES CAR AFTER THE LA TURBIE DISASTER.

height of the automobile week at Nice, caused intense excitement and changed an event of much gayety to one of deepest sorrow. The accident occurred when negotiating a sharp turn in the road. Other competitors had preceded Count Zborowski and had safely passed the fatal corner. Those who spoke to him before the start say that he appeared to be nervous and even predicted disaster. He started off, however, on time, and was going at a rate of speed of about 63 miles an hour when approaching the curve. Whether he momentarily lost control of the machine or misjudged the speed or the possible turning radius at that speed, is not exactly known and probably never will be. The machine left the safe path, however, and crashed into the wall of rock which towers over the course at this point, and he met instant death.

Photographs showing Count Zborowski in a car, and the scene immediately after the disaster, will be found on another page.

Staff Correspondence.

LONDON, April 5.—To say that the terrible death met with by Count Zborowski in the Nice-La Turbie race has cast a gloom over automobile circles, both in London and the provinces, is to state the case very mildly. The Count was a familiar feature at the automobile club in Piccadilly, where he was a great favorite with all who knew him. After our grief and sorrow at so untimely an end to a young and buoyant life the point which next obtrudes itself upon the mind of the British automobilist is the fact that by Count Zborowski's death England is deprived of one of the most skilful and intrepid drivers upon whom she largely depended for the conduct of one of the representative vehicles in the Gordon Bennett competition.

Should three Napiers qualify in the eliminating trials it is difficult to see where the third driver is to come from, as so few men in this country have any experience of driving high-speed cars in competitions of this character. There is one man who bears a reputation for skill and pluck second to none, and he is the managing director of the British Automobile Commercial Syndicate, a Mr. Weigel, who drove a 20 horse power Clement car through to Vienna in the late Paris-Vienna race. As he is intimately connected with the importation and manufacture of another vehicle, and is *persona non grata* at 119 Piccadilly, he is not likely to be asked. Certainly we have Mark Mayhew and Hutton, but both of these are married men, and after poor Zborowski's fatal accident they are more than likely to veto the race to their lords and masters. Mr. Lisle, Jr., who will drive the 70 horse power Star car in the eliminating trials, has had no racing experience, and is therefore quite a dark horse, and it is not probable that he would be permitted to steer a Napier.

## The Selection of a Gasoline Automobile According to Price.

What an Intending Purchaser Can Buy at Different Prices—Purposes for Which Runabouts, Folding Seat Vehicles, Convertible Tonneau and Open and Closed Touring Cars Are Designed.

So many new automobiles have been placed in the market for the season of 1903, and their claims to consideration are so varied, that the matter of making a choice is hedged about with many difficulties, especially for the novice. Many factors must necessarily influence a selection. The requirements of the buyer will differ according to the uses to which each individual purchaser wants to put his machine, and whether he is a bachelor or a benedict, a professional or a business man or a man of leisure; whether his family, if he has any, is small or meets with the approval of President Roosevelt in the matter of size, whether he is content to make his car a utility vehicle and use it within

vehicle sets a figure that he thinks he can or believes he will pay; then he casts about to learn what kind of a car is most suitable for his requirements, and finally which one offers the most in appearance, serviceability, ease and certainty of operation, and in speed and comfort within the limitations of those figures.

### ADVANTAGES OF THE POWER VEHICLE.

A surprise is nearly always in store for him when he gets to this stage, as his ideas of what an automobile ought to cost are almost invariably based upon his knowledge of the cost of horses and carriages, and he soon has them rudely shaken. Especially if he is or has been



SIMPLEST AUTOMOBILE BUILT—PRICE \$500.

city limits, or is a lover of nature who finds his best enjoyment in traversing the country roads, breathing the fragrant air and drinking in visually the ever-changing delights of the rural wayside; whether he will be content to swing along at a moderate pace and mount grades on the low gear, or wants occasionally when on a remote and unfrequented stretch of good road to feel the exhilarating thrill of a rush through the air, and whether he has an inborn liking for mechanical matters and machinery or prefers to be relieved of the details of operation and to devote his attention to conversation and viewing the scenery.

There is, apparently, only one common ground whereon everybody stands in the selection of an automobile; that is the matter of price, or before price, the amount that the prospective purchaser feels able or willing to pay for a machine. Everybody starts from this as a basis, and comes back to it in the end as the determining factor. Frequently the figures undergo considerable change in the interim—almost invariably an increase—yet price may safely be said to very largely determine the choice within certain broad limits. First he who is considering an investment in a power driven road

an owner of horses, he thinks he should be able to buy a first class "family" car for the price of a span of good horses and a carriage and harness. So he inquires for the best tonneau or brougham, and, upon asking the price, stands aghast when quoted a sum anywhere from \$2,500 to \$10,000. He overlooks, or does not know that the stabling and care of a span of horses and a carriage cost \$50 a month, while a touring car can be stabled and kept cleaned ready for use at less than half that amount. Nor does he at first appreciate the vastly greater service that can be got out of the power vehicle, which can be driven from 40 to 100 miles day in and day out, and, if it is a gasoline or steam car, can be driven continuously, with stops only for fuel and water, just as long as the operator can stand the strain, while horses are capable of never more than forty miles in one day, and not more than twenty miles a day consecutively. Usually he has, however, by observation, some idea of the greater speed that can be maintained by the automobile. The same comparison holds true in proportion of the lighter runabouts and single-horse rigs.

Unless he is of a mechanical bent of mind, the novice is also predisposed at



first in favor of an electric automobile because of its simplicity of operation. He may prefer to become familiar with the pleasures of motoring through the medium of a steam vehicle. Taking intelligent folk as you meet them, a much larger number will be found with some theoretical or practical familiarity with

get in a certain range of prices, and how well the qualities of the various cars meet his possible requirements.

### \$500 to \$600.

Eliminating motor bicycles, tricycles and quadricycles as being in a class by themselves, the lowest price at which a

chine running on four wheels and affording seating capacity for two passengers riding side by side. It has none of the quadricycle characteristics, no tubing being used in the frame work and no bicycle saddle being fitted. Briefly, it is a platform of boards screwed to two spring reaches of wood carried on front and rear



650-POUND SIDE SPRING RUNABOUT—PRICE \$650.



RUNABOUT WITH AIR-COOLED MOTOR—PRICE \$550.



ROAD CAR WITH 5-H.P. HORIZONTAL MOTOR—PRICE \$750.



6-H.P. SIDE SPRING RUNABOUT, WOOD WHEELS—PRICE \$700.



RUNABOUT WITH ATTACHABLE TONNEAU—PRICE \$750.



MOTORETTE WITH AIR-COOLED MOTOR—PRICE \$750.

the steam boiler and engine than with the internal combustion motor. For the purposes of this article, however, we assume that for one reason or another the intending purchaser decides in favor of the gasoline machine, and we shall proceed to discuss what sort of a vehicle he can

new automobile of 1903 model can be bought is \$500. For this sum the would-be automobilist can become possessor of a little 350-pound machine. It represents the acme of simplicity in gasoline vehicle construction and operation and is designed to meet the demand for a low-priced ma-

axes, with a regular buggy seat in the middle and an air-cooled 4-horse power motor on the rear axle. The motor is governed by throttle to give a variation of speed from four to twenty miles an hour and is directly connected by spur gearing with a differential on the rear axle.

All of the machinery is exposed with the exception of the enclosed crank mechanism and the compensating gearing, while a fan driven by the engine itself forces a cooling draft of air directly upon the valve chamber. Instead of a crank, the motor is provided with a strap and ratchet drum on the crank-shaft for starting.

A wheel-base of 80 inches, together with the wood reaches of the platform, afford the utmost flexibility, making riding comfortable on the broad cushioned seat which is provided with a back. With a tread of but 3 1-2 feet, this miniature automobile can be driven readily through streets congested with traffic of larger vehicles, and the light weight makes it possible to easily move it about by hand if necessary. The wheels are 26 inches in diameter, with heavy wire spokes, wood rims and 2 1-2-inch tires, giving a harmonious proportion with the rest of the vehicle, whose general appearance is made pleasing by natural wood finish and nickel plated metal parts.

The machine has the regular automobile steering mechanism—front wheel steering knuckles and a center steering tiller. The gasoline tank attached to the rear of the seat has capacity for a run of 100 miles. The motor is sufficiently powerful to carry the vehicle up ordinary grades with two passengers. Speed is controlled by pressure of the driver's foot on a button connected with the throttle and by advancing or retarding the spark.

The machine has one peculiarity in common with the familiar cable car on surface railways, and that is its forward motion cannot be reversed by power. If it becomes necessary to go backwards you must get down and push. But the weight of the vehicle is so light that this can be done without much effort, and then one cannot expect to get all the advantages of the more expensive types for \$500. The brake is operated by foot and the clutch by a hand lever.

A machine of this type offers at little expense a quick and convenient means of conveyance suitable for use in cities and towns where the streets are paved, and is readily housed and cared for. It may be considered, in fact, the connecting link between motor cycles and automobiles.

#### SIMPLEST FORM OF CARRIAGE.

The purchaser can, at the same price, also secure an automobile carriage in its simplest form, fitted with piano-box body and upholstered seat with capacity for two persons sitting side by side. This has the general appearance of the light horse-drawn road wagon, and, complete with its power plant, weighs but 550 pounds. It is driven by a 3 1-2-horse power air-cooled motor suspended in plain view on the front axle where it gets the full benefit of the air currents. The frame is of tubing and is carried on four wire wheels 28 inches in diameter equipped with 2-inch detachable tires. The body is comfortably supported

upon three full elliptic springs and the spindle seat is provided with a tufted cushion and upholstered back. The usual steering knuckles are used for the front wheels and are turned by a side lever.

Two forward speeds are afforded by a clutch mechanism under the middle of the body, whence the power is transmitted to two sprockets on the rear axle. A maximum speed of twenty miles in the hour is furnished, with variation by throttle and gear change for hill climbing or other hard going. The motor can be started from the seat by means of a strap working on a drum provided with a ratchet. The motor and the gears are controlled by handles on the steering post, but the brake is operated separately.

The exposed position of the motor is not only the best for cooling, but also has the added advantage of making the machinery very accessible for examination and, if necessary, adjustment and repair.

The same running gear and power plant fitted with a more elaborate body of automobile type can be bought for \$50 more.

The man who wants a light carriage for the use of himself or his wife or children in pleasant weather in town and on good streets, where the law prohibits excessive speed, and is predisposed in favor of a vehicle that has the general appearance of the horse-drawn carriage without any attempt to conceal the fact that it is a power driven machine, should find his requirements met by an automobile of this type, which requires no large outlay to provide shelter for it, or can be stored and cared for at a regular automobile station at small expense, and is simple and perfectly safe to operate.

#### UP-TO-DATE MOTORETTES.

Perhaps the buyer, though wishing to fill the same requirements, also desires to have a machine that has a distinctive up-to-date "automobile" appearance. There is just now being placed in the market a little 650-pound car of the latest motorette type having a bonnet in front, after the foreign style, under which is concealed a 4 horse power air-cooled motor. Like the latest cars, both American and foreign, this machine is reachless and has an angle steel frame set on four full elliptic springs. The body is of the runabout type provided with a leather upholstered seat of sufficient width to accommodate two persons comfortably and with a comfortably high back. The wheel-base is longer than that in the ordinary horse-carriage style of vehicle, and the body is low, giving ease in riding and stability in driving. The wheels are of the wire suspension pattern, 28 inches in diameter, and the usual automobile steering knuckles and side lever are used for steering. A fan, driven by belt from the engine shaft, aids in cooling the cylinder of the motor, which drives to a two-speed planetary change gear under the middle of the body, which is con-

nected by chain to the differential at the middle of the rear axle. The motor is lubricated automatically from a sight-feed oiler attached to the dash, and there are spark advancing and fuel feed regulating devices.

This little car is capable of a speed of twenty or more miles an hour on good level roads, is strongly and durably built and convenient in operation.

Another car has just been put out at a price slightly less than \$600 that also has a reachless running gear, a front hood, two-passenger seat and semi-elliptic carriage springs. This has the distinctive "automobile" appearance, the ends of the springs connecting with goose necks riveted to the frame, long, sloping rear body portion, and artillery type wheels fitted with 3 or 3 1-2-inch pneumatic tires. The motor is of the single cylinder, water-cooled type, placed horizontally in the back of the body, while the tanks are carried under the bonnet in front. It is a runabout designed for general everyday use. Steering is by center tiller.

#### \$650 to \$850.

Without doubt the most popular demand in the United States is for general utility machines of the runabout style of from 5 to 7 horse power, weighing from 600 to 1,000 pounds and capable of a maximum speed up to twenty-five miles an hour. Such machines meet the requirements of a very large class of purchasers who want vehicles at moderate prices that can be used for quick and convenient transportation in the congested traffic of cities and towns and yet which are also capable of the severer work on country roads and in bad weather. While the majority of motor vehicle users may in actual practice seldom drive far beyond the limits of cities and rarely venture off of well-made roads in the country, "hope springs eternal in the human breast," and everyone likes to contemplate long trips into the rural districts and even tours of a month or more. Each purchaser likes to feel that if he is ever able to indulge in such trips he has a car that can be depended upon to carry him up hill and down, through mud and over rough roads for 100 miles or more on one filling of the tanks, and at a fair average speed of twelve to fifteen miles an hour. Briefly, he wants an automobile that will "go anywhere that a horse can go," and most purchases of light gasoline cars are made with this in mind.

American constructors have recognized this demand from the start and in their attempt to meet it lies the most notable difference between the home and foreign industry. Thus a broad choice in makes and styles is offered between the sums of \$650 and \$850.

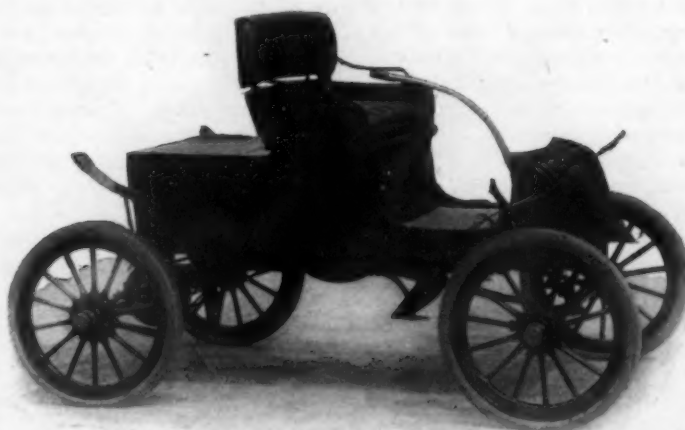
#### SPECIFICATIONS OF RUNABOUTS.

While there are no standard specifications covering the large and varied line of



gasoline motor vehicles embraced in the class commonly designated as runabouts, the following will apply to the majority of them.

Wheel-base, 66 to 72 inches; tread, 56 inches; wheels, 28 inches; tires, 2 1-2 or 3 inch, single or double tube; spokes, wire or wood; frame, angle steel; reachless springs, side leaf or full elliptic; body, special removable automobile pattern, with square or sloping rear portion and hood or box front used for tanks or storage space; seat, one, for two passengers, cushioned and upholstered in leather; motor, single cylinder, four-cycle, horizontal, 4 1-4 to 4 3-4 inch bore by 4 3-4 to 6 inch stroke, located within the body at the rear; cooling water, pumped; transmission planetary; speeds, two forward and reverse, giving variations up to a maximum of twenty-five miles an hour on first-class roads; regulated by gas throttle and spark advancer; drive, single



5-H.P. RUNABOUT WITH ARTILLERY WOOD WHEELS—PRICE \$800.

easier task to extricate them from mud, axle deep, than is the case when cars weighing a ton or more become mired.

them for the particular requirements they are designed to meet renders some of the lighter and cheaper of them hardly suitable for continued heavy service on poor roads. Weighing little and having a comparatively short wheel-base, they are as a rule steered by center tiller or side lever, though wheel steering is rapidly growing in favor. They can be started and stopped almost instantly, and by a sudden movement of the tiller can be swung in short turns to avoid collisions and thread their way through crowded thoroughfares.

#### THE MATTER OF EQUIPMENT.

The runabouts are regularly designed to carry two persons, but many of them can be fitted with a removable dos-a-dos seat for two additional passengers, while several of the latest models sold at \$750 to \$800 are regularly built to take detachable tonneau seats, at an extra cost of \$100 to \$150. Practically all of them can be fitted with folding buggy or victoria tops for use in rainy or disagreeably cold and windy weather; the top attachment, supplemented with side curtains and storm apron, completely protecting the occupants. The buggy top, of a good quality of buffed leather, together with the curtains and apron, usually adds \$40



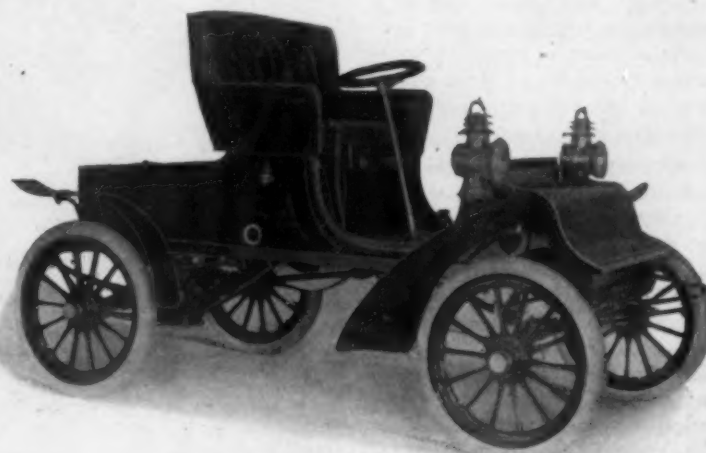
5 1/2-H.P. ROAD CAR WITH BUGGY TOP, COMPLETE—PRICE \$800.

chain to differential on rear axle between spring blocks; ignition, dry cell battery; make and break spark; lubrication, automatic sight feed; brake, band, on differential, and band on wheel drums; range on one filling of tank, 100 to 150 miles; finish, a dozen coats of paint, varnished, buffed leather; color, black or shades of dark red; equipment, fenders and kit of tools; total weight, 650 to 1,200 pounds.

#### EFFICIENCY OF RUNABOUTS.

Competition of the runabout machines, in this class, with the larger American and foreign high powered touring cars in the 100-mile and 500-mile endurance runs and reliability contests, has demonstrated their ability to negotiate long-sustained runs over average good American roads. Long individual trips also, over excessively muddy dirt roads, have shown them not only able to make fair headway, but to have advantages over heavier machines under certain conditions; it being a much

Because of their lightness, the runabouts are also less likely to get stalled. On the other hand, the very lightness that fits



ROADSTER WITH LONG BASE AND WHEEL STEERING—PRICE \$850.

to \$50 to the selling price, while the victoria top costs about \$75. In one or two makes a buggy top covered with rubber is offered with storm apron for \$30 extra.

The seats are usually upholstered in leather, tufted and stuffed with curled hair or moss over cushion springs. Manufacturers are now in many cases furnishing their runabouts ready equipped at no additional cost with mud fenders over all wheels, with two side lamps, an automobile horn and an outfit of tools to be car-

vehicles whose bodies are supported by long leaf side springs that serve the double purpose of reaches and springs, giving a remarkable degree of flexibility and easy motion in riding. In both types the power plant is supported by the springs, being carried upon the middle section of the springs themselves in the side-spring machines and on the frame in the reachless cars.

In general, the light automobiles have two speeds forward and a reverse, through

water tanks or for a receptacle for storm apron, clothing, gloves, packages, tools and parts, and various odds and ends.

There are, however, some notable exceptions to the general types of runabout cars, notably a car driven by a two-cylinder motor and having a Mercedes pattern hood, a 6 horse power double cylinder, two-cycle motor car, a friction drive light runabout, and a little motorette of 5 horse power driven by a single-cylinder, vertical motor under a French hood and transmitting by direct longitudinal shaft with two "cardan" or universal joints to a sliding gear change speed and from that by bevel gears to the differential. All but one of these have hand wheel steering, and the last has a flywheel clutch like its bigger brothers of late pattern, angle steel frame, semi-elliptic springs, detachable tires, a 62-inch wheel-base and tread of 48 inches. Most of the runabouts of to-day are made with the standard tread of 4 1-2 feet, so that the wheels can accommodate themselves to the ruts and tracks made in our earth roads by wagons and buggies. The weight of the little motorette referred to is only 650 pounds, and the price, fitted with wire wheels and minus mud guards, \$650. The two-cycle motor car develops 6 horse power, has a wheel-base of 56 inches and standard tread, and weighs, fitted with 28-inch artillery wood wheels, 1,200 pounds. The advantages claimed for the two-cycle motor are its simplicity and few working parts, steadiness of operation and proportionately large power developed. The selling price is \$800. The car with the Mercedes or square German pattern hood has an unusually long wheel-base for a runabout—78 inches—and standard tread, angle iron frame, sliding gear trans-



RUNABOUT WITH FOLDING FRONT SEAT—PRICE \$950.

ried in the machine. There is, however, a great difference in this matter of equipment, some makers supplying nothing but the bare machine and a kit of tools. Artillery pattern wheels, either of wood or tubular steel, are coming into more general use on runabouts than formerly. In some cases these will be furnished, fitted with double-tube detachable tires, for an extra charge of \$50, in place of the wire suspension wheels and single-tube tires regularly fitted. Detachable tires, like wood wheels, are growing rapidly in popularity.

Equipment has much to do with the comparative prices of automobiles and should not be overlooked when making a purchase. It is only by adding to the cost of some cars the customary extra prices for artillery wheels, detachable tires, fenders, lamps, horns, storm apron and tools, that are not included in the selling price, that a fair comparison of prices with those of other cars including these items can be obtained. Physicians, who as a class constitute the largest and most progressive body of users of runabout automobiles, especially require all of the equipments, including top and storm apron.

#### TYPES AND CONSTRUCTION.

The type of machine coming within the price range from \$650 to \$850, usually designated as "runabout," is, with few exceptions, driven by a single-cylinder, horizontal, water-cooled motor carried near the middle or well back under the body. The power varies from 4 1-2 to 8 horse power, according to size and price of the vehicle. There are two general types—the reachless car, in which the body platform is carried on elliptic or semi-elliptic springs directly bolted to spring blocks on the axles, and the lighter

planetary gearing carried on the crank-shaft itself at the side of the motor and driving by chain to a sprocket on the differential gear on the rear axle, between the springs. A center steering tiller or side lever is ordinarily used for steering, although there is a growing tendency to wheel steering in these machines, while the speed changes are controlled by a lever at the side of the seat. The cars are started by a crank from the side of the vehicle, some being so arranged that the crank can be turned without dismounting from the seat.

Aside from these general characteris-



HEAVY RUNABOUT OR ROAD CAR, WITH TONNEAU—PRICE \$1,000

tics, there is a great diversity in the form of body, the location of tanks, the type and position of carbureter, muffler, radiator and circulation system. Since the tonneau style of body became popular a number of the builders of runabouts have constructed the bodies of their cars with fronts to resemble the motor hoods of foreign type cars, but the space under them is utilized either for the gasoline and

mission system giving three forward speeds, cone clutch in the flywheel and radiator and tanks located under the bonnet. The list price of this is \$750.

Another exception to the general type of runabout is a \$750 motorette driven by a 5 horse power, vertical, air-cooled motor located in front under a hood and driving by direct longitudinal shaft to the two-speed transmission gearing connected



with the differential on the rear axle. This machine has a tubular running gear and the body is suspended upon three full elliptic springs. The motor is started by a strap from the seat. Steering is by side lever. Wheels are of the artillery type.

The air-cooled motor has attractions for many because of its simplicity, freedom from cooling water troubles, less cost and light weight. In an air-cooled machine there is no water to bother about when neglected, and no circulating pump to get out of order. Neither is there any water tank to occupy space in the car and to add to the "non-paying" load. The limitations of the air-cooled motor have not yet been determined, although it has been carried as far as the use of four cylinders in a 12 horse power car, and work has been started on a three-cylinder 16 horse power air-cooled tonneau car.

**\$950 to \$1,300.**

Ambition to possess a "family car" suitable for carrying four or five persons

the pursuit of their vocation or practice of their profession, while at the same time, being the heads of families, nominally at any rate, they unselfishly wish to have their wives and children participate in the pleasures and conveniences of the power vehicle. Aware of the extensive desire for vehicles that will fulfill such requirements, the designers and manufacturers

type of machine. Either the body is made with a long sloping rear upon which can be placed a supplementary tonneau with two seats, or the body is constructed with a folding front seat that is entirely concealed when not in use.

This folding seat has a footboard that opens downward to the limit of two chains and a cushioned seat back that



FOUR-PASSENGER CAR, WITH FOLDING SEAT CLOSED—PRICE \$1,200.



3-H.P. HORIZONTAL MOTOR TONNEAU CAR—PRICE \$1,250.



AIR-COOLED FOLDING SEAT CAR WITH TOP—PRICE \$1,285.

over paved streets and good average roads free from excessive grades can be gratified at moderate prices, ranging from \$950 to \$1,300. Many men, physicians especially, have daily use for a comparatively light and readily handled automobile in

have given us a class of automobile that is convertible from a two-passenger machine into one for four or five persons. This is done in two ways, not counting the attachment of a dos-a-dos seat, such as is commonly used with the runabout

opens upward and is held by rods or hinges that also prevent the back from falling forward. This auxiliary seat is in front of the operator's seat and over the front axle, and, although designed more especially for children and light persons of small stature, is sufficiently roomy and strong to carry grown ups. The seat is well cushioned and provided with side rails. Such a seat is preferable to the dos-a-dos seat on which the extra passengers ride backward and get the benefit of the dust raised by the swift passage of the vehicle over dirt roads. The folding front seat is comfortable enough for an entire Sunday afternoon's ride for the younger members of the family, who owe a debt of gratitude to the constructors. As the reverse sides of the footboard and seat back are of wood, painted and varnished like the rest of the vehicle body, the auxiliary seat when folded looks like a box front of any other automobile, and leaves so little indication of its presence that it is not detected by the casual observer. The space under the seat is util-



ROAD CAR FITTED WITH DOS-A-DOS SEAT—PRICE \$1,325.

ized for the storage of lunch baskets and wraps, when the family takes a day's picnic outing, or for the doctor's medicine

planetary gears. Maximum speed on good roads is 25 to 30 miles per hour, and the cars have sufficient power to

are 36 and 37 inches wide, with comfortably high and well cushioned backs. The bodies are low and ample fenders are fitted. A step is usually attached to the front axle or spring to facilitate entrance to the front seat.

#### CONVERTIBLE ROAD CARS.

The convertible light car with removable tonneau seats offers the same possibility of owning a general utility machine that can be used as a runabout by one or two persons or quickly altered to accommodate four or five. A number of such vehicles have been brought out for the season of 1903, and there has been a strong demand for them because they offer a form of body at the present time most popular. The prices range from \$900 to \$1,200, with tonneau portion of body. These machines are of the latest design, with reachless running gears and angle-steel frames on four elliptic, semi-elliptic or three-quarter elliptic springs. They are generally characterized by long, sloping rear body portion back of the operator's seat and a hood in front, following generally the lines of the foreign pattern



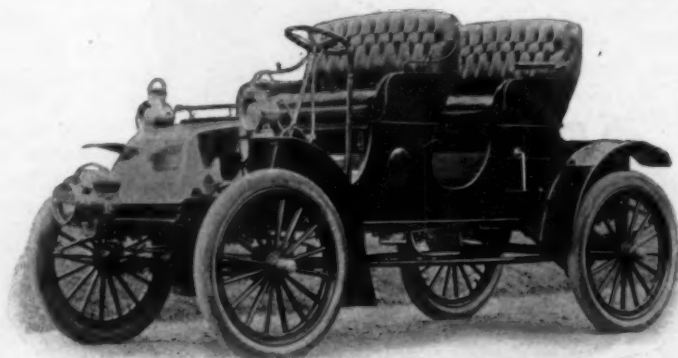
10-H.P. CAR, WITH DETACHABLE TONNEAU—PRICE \$1,750.

and instrument cases when the car is used for visiting his patients.

#### DIMENSIONS OF FOLDING SEAT CARS.

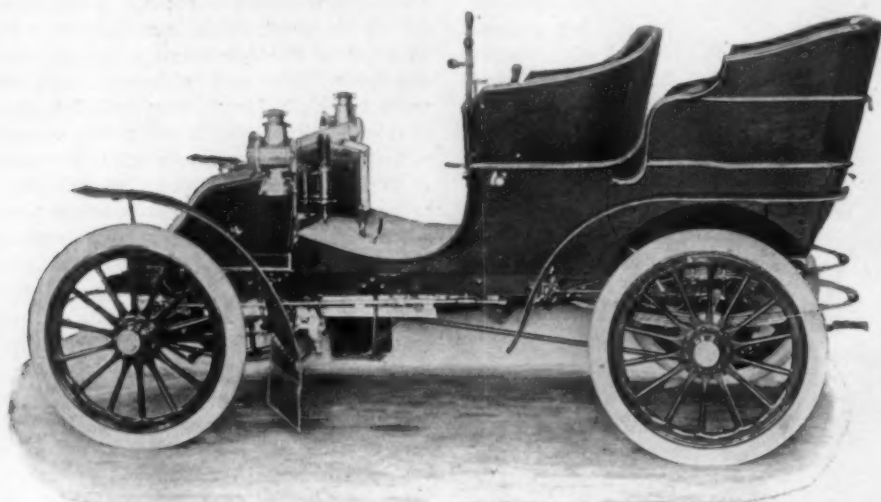
Gasoline cars constructed with this folding front seat are as a rule somewhat larger and heavier than the runabouts, and are a little more powerful. Of five such machines of 1903 model, the motors are of 5, 6, 8 and 10 horse power, single cylinder, the weight of the vehicles complete is from 1,100 to 1,600 pounds, and the prices \$1,150 and \$1,200. Several styles of engine are used—both water and air cooled and horizontal and vertical—all placed under the car toward the rear. Wheels are either of wire suspension or wood artillery type, 28, 30 and 32 inches in diameter and fitted with 2 1-2, 3 and 3 1-2-inch tires. Two of the cars have frames of tubular construction, one has leaf side springs and the others have angle steel frames carried on elliptical springs. Three have two for-

mount grades of 25 per cent. with two passengers up. Steering in two cases is by side lever, in two by hand wheel, and



AMERICAN STYLE SURREY—PRICE \$1,800.

in a fifth by a crank at the top of a vertical post in the middle. The wheel bases are 72 to 80 inches and the tread 54 and



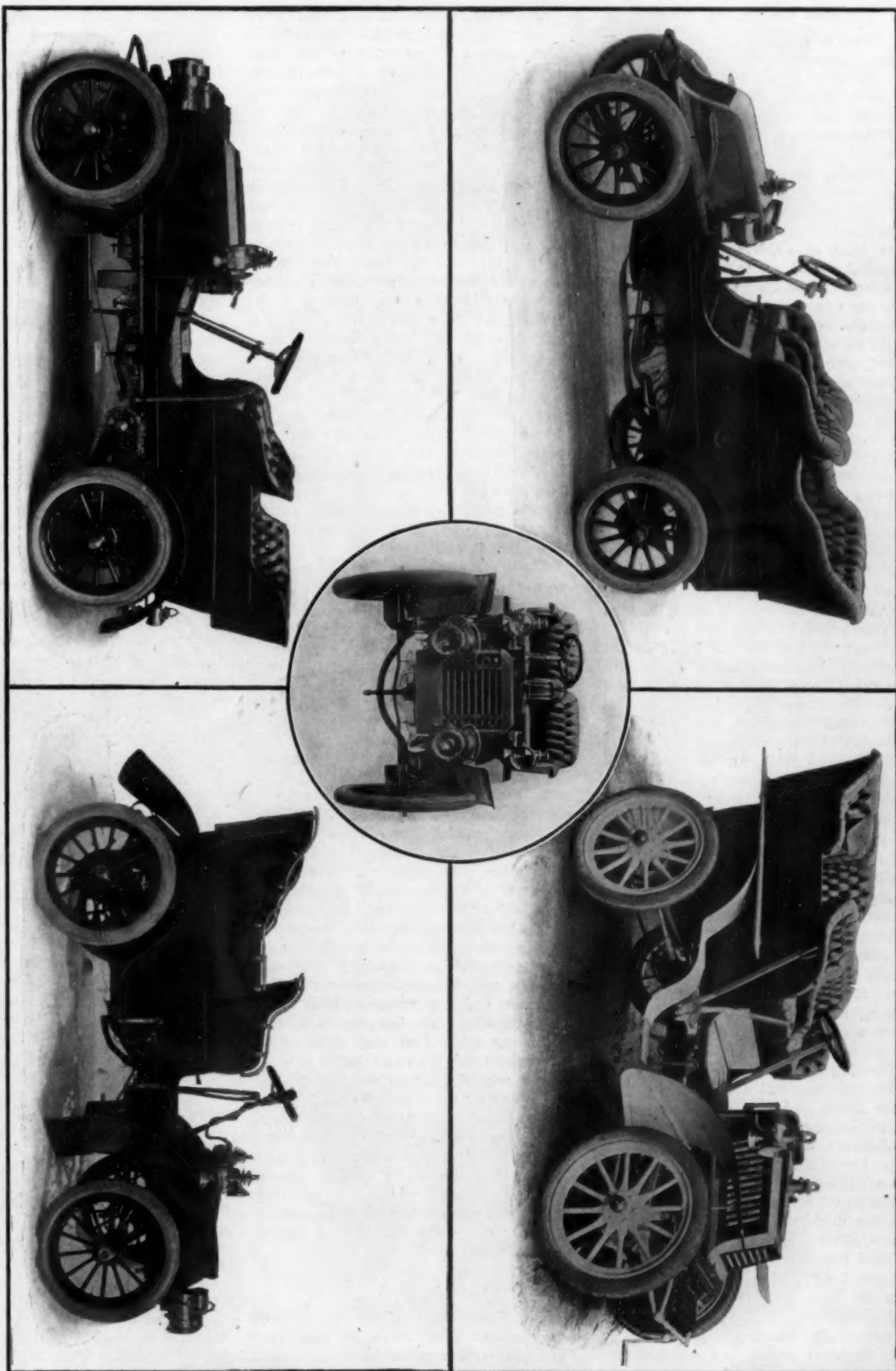
TONNEAU CAR WITH DOUBLE CYLINDER HORIZONTAL MOTOR—PRICE \$1,750.

ward speeds and reverse, and two have three forward speeds, all secured through

56 inches. The front seats vary from 34 to 36 inches in width, while the rear seats

automobiles. The hood, however, is a "bluff," the machines being driven by one or two-cylinder horizontal motors carried on the frame under the middle of the car, and the space beneath the bonnet being occupied by fuel and water tanks or reserved for storage space for wearing apparel and tools and extra parts for repairs on the road. The style and capabilities of such cars differ according to price, but in general they are of 7 or 8 horse power, driving through planetary change speed gears affording two forward speeds and reverse, or through sliding gears giving three forward speeds and reverse, with possible speed up to thirty or thirty-five miles, have wheel steering, artillery type wheels of wood or tubular steel, long wheel-base, automatic or force feed lubrication, float-feed carbureter, forced cooling water circulation, tires of large size, powerful hub brakes and generally strong construction. They weigh 1,000 to 1,250 pounds. The finish and upholstery is of superior quality, and the cars are built with a view to standing general daily service. A few of the lighter, less powerful





TYPES OF POPULAR AMERICAN TONNEAU BODY TOURING CARS FROM 12 TO 20 HORSEPOWER.

Double Opposed Cylinder Motor, Tilting Steering Column — \$2,500.

Four-Cylinder Vertical Motor, Double Chain Drive — \$3,500.

Motor Front Car With Divided Seats — \$3,000.

Two-Cylinder Vertical Motor, High Back Seats — \$2,500.

Single-Cylinder Horizontal Motor, Side Starting Crank — \$2,500.

## SOME SPECIAL MACHINES.

Exceptions that prove the rule are also found among the vehicles coming within the price range from \$900 to \$1,300. One of these which attracted much attention and elicited favorable comment at the national shows last winter, especially from the women, is a motorette, possessing many of the features of the latest foreign tonneau cars, weighing 700 pounds and listing at \$1,000. This has the latest pattern honeycomb radiator at the front of a Mercedes style hood, a vertical motor under the hood, driving by longitudinal shaft under the middle of the car to a counter-shaft below the seat that carries the differential and transmits by two side chains to the rear wheels. The running gear is reachless, the body being secured to an angle steel frame supported on four semi-elliptic springs. The clutch is of the conical type, fitting into the face of the flywheel, and the change speed gears are of the sliding or clash form, affording three forward speeds of twelve, twenty and thirty-five miles an hour and one reverse speed. The motorette is fitted with hand steering wheel on a broken column, permitting the wheel to be tilted forward to afford easy egress and ingress of the operator. Any preferred style of seat is fitted, but that regularly provided is of the divided or individual pattern, the car being designed for only two passengers. Commodious wicker hampers are attached to either side of the seat and unusually long and broad mud fenders are fitted over all the wheels. The wheels are of the wood artillery type, 28 inches in diameter and fitted with 3-inch tires. The machine is fitted with roller and ball bearings throughout.

This machine has a wheel-base of 6½ feet and is of 8 horse power, the motor being of French build. The cooling water is circulated through the motor jacket and radiator by a friction drive pump. Only two gallons of water are carried in the entire system, owing to the rapid cooling in the radiator. The gasoline tank, however, is remarkably large for so small a car, its capacity being twelve gallons, sufficient for a run of 250 miles, it is said. The lubrication is by automatic sight-feed oiler on the dash. The equipment includes a head light, two side lamps and one rear signal and a large imported horn.

Another notable exception, and one that brings the air-cooled motor machine also within this price classification, is a 1,000-pound two-passenger car having the unique distinction of being built with a four-cylinder, upright, air-cooled motor placed transversely at the front under a square hood having a coarse wire mesh at the front to give the effect of the honeycomb radiator. The bore and stroke of the cylinders is 3½ inches, giving 10 horse power, and a speed range

from five to thirty miles, with direct drive on the high speed clutch. The transmission gearing affords a slow and high forward speed change and slow reverse. The frame of the car is of angle iron, resting on four elliptic springs, and the wheels are either of wood artillery type or wire suspension, as preferred. In addition to a double acting band brake on the differential, the reverse gear operates as a brake. Both are operated by foot levers. The high and low speed clutches are operated by a hand lever at the side of the car, and the spark and throttle levers are attached to the steering column below the hand wheel. Ignition is by jump spark from one coil for the four cylinders, current being furnished by a dynamo generator, with an auxiliary and starting current furnished by a small storage battery that is constantly charged from the dynamo. The float-feed carbureter is so constructed that the throttling does not change the quality of the mixture, the proportion of gasoline and air remaining constant. Seven gallons of gasoline are carried, sufficient for a run of 125 to 150 miles, depending on the operator and the state of the road.

The body of this car is of unusual design, the seats, which are either plain or divided at the option of the buyer, being well back over the rear axle and the space beneath being almost all available for the storage of any packages or articles desired, while back of the seat there is room for the attachment of a large hamper or a trunk for touring. The car has a 72-inch wheel-base and tread of 4½ feet. The weight is between 1,000 and 1,100 pounds. The list price is \$1,300.

Still another exception is a new car just coming into the market that has a 12-horse power, four-cylinder, opposed, horizontal motor, carried within the body over the rear axle and transmitting through a four-speed sliding gear system under the footboard. It is adapted to take a dos-a-dos seat, and steers with a hand wheel. It is of reachless, angle steel construction, mounted on wood wheels, and has tanks under the hood in front, and the workmanship is of superior quality. The list price is \$1,000.

Among other cars that come within this price range are two vehicles at \$1,250, one a regular tonneau pattern, with detachable rear seats, and the other a road car adapted to take a dos-a-dos seat at an additional cost of \$75. Both are driven by horizontal motors, one a single cylinder and the other a double opposed cylinder engine, the former of 7 and the latter of 8 horse power. The general description of the convertible road cars applies to these machines.

**\$1,400 to \$2,000.**

The French style of touring car with the tonneau (half barrel or tub) seats and the vertical motor in front, covered

with a hood, possesses such a distinctly "automobile" appearance, impossible to confuse with a horse-drawn vehicle, that it at once leaped into popularity abroad and has been extensively copied in this country. The tonneau is built to carry four or five persons, two on the front seat and the others in the rear portion which has two seats in the corners facing partly forward and partly toward each other, the corners of the body being rounded outward to form the back, and in effect suggesting those home-made seats formed by sawing a barrel half way through the middle and placing a bottom in it for a seat and then covering with some gaily colored material, according to instructions in such books as "How to make the home beautiful." The tonneau part of the automobile body overhangs the rear axle, sometimes to a considerable extent, and a door that opens outwardly is provided at the middle of the back between the two seats. Often a third seat of small size is hinged to this door and folds downward, and when the door is closed may be raised and fastened in position, forming with the others a continuous seat across the back of the vehicle that is amply large to accommodate three adults in comfort. While automobile makers and users are not unanimously of the opinion that this form of body is the very best and most comfortable that can be devised, it is nevertheless, so convenient, so distinctive and so excellently adapted to motor-in-front construction, that it came into almost universal use abroad. The vehicles so built, however, are, most of them, of high price, owing to the employment of two and four cylinder upright motors, shifting gears giving three or four forward speeds and expensiveness of construction in general.

## MODERATE PRICED TONNEAU CARS.

American manufacturers, with their quick perception of the trend of fashion, have made it possible for the purchaser of cars in this country to be in the mode in the matter of appearance at a moderate cost by producing tonneau cars fitted with double-cylinder horizontal motors driving by chain and with two or three forward speed planetary or sliding gear transmission. Machines of this type are listed variously at \$1,400 to \$1,800. Usually the opposed cylinder motor is hung under the middle of the car, though some at no higher price, have twin-cylinder upright motors in front. But the majority have the space under the hood occupied by the tanks, while all of the machinery is below the body. Of three tonneau cars offered at \$1,400, one is driven by an 8-horse power double-cylinder opposed motor under the middle of the machine vehicle, has sliding gear transmission, affording three forward and one reverse speed change, inlet and exhaust valves that are mechanically operated by a two-to-one secondary shaft driven by the en-



gine, float-feed carbureter, half-inch roller chain, ball and roller bearings, throttle and spark control, automatic force feed lubrication, pump circulation, combination tapered steel and angle iron frame carried on platform springs 32 and 36 inches long, artillery wood wheels 28 inches in diameter, fitted with 3-inch detachable tires, double acting band brake, 78-inch wheel-base and 52½-inch tread, copper tanks with capacity for 200 miles, the gasoline tank being located under the hood, large and noiseless muffler with cut-out valve to relieve back pressure when speeding or ascending hills, hinged steering wheel, and detachable King of the Belgians tonneau body. The lines of this car are graceful, and the finish novel and attractive.

Another of the three cars at this price has a 9-horse power, two-cylinder upright motor located in front under the hood and driving through a two-speed-and-re-

sion system hung on a countershaft under the footboard, which gives three forward speeds up to twenty-eight miles an hour and a reverse speed of eight miles. Drive from the counter shaft is by single chain to the differential on the rear axle. The tonneau body is hung on a reachless frame

or solid black, as preferred. Gasoline and water tanks are adapted for a run of 150 miles on one filling. The car is equipped with a pair of automobile lamps, a horn, storm apron, oil can and full set of tools. Its weight complete is 1,450 pounds. The tonneau seats are detachable.

More powerful and heavier cars of the same general type, having double cylinder opposed motors under the middle of the body, are listed at \$1,700 and \$1,750. These develop 10 to 15 horse power, have a maximum speed of thirty miles and weigh 1,400 to 1,600 pounds. The wheel-base is from 6 feet 2 1-2 inches to 6 feet 6 inches, and the tread standard. The wheels are 30-inch wood artillery, and the tires 3 and 4-inch detachable. Transmission is by planetary or sliding gears, affording three forward speeds, and two powerful band brakes are fitted to the wheels in addition to the usual brake on the differential or transmission. The tonneau seats are removable. These machines are designed to serve the same purpose as the \$1,400 models, but embody more of the features of the foreign tonneau touring cars, such as the sliding gears and cone clutch.

#### THE COMFORTABLE SURREY

Until the present year the surrey was almost purely an American type, but is now being copied abroad. It has certain advantages for which it is preferred by many; for instance, the rear seat does not overhang the rear axle and the riders in it are no more troubled with dust than those in the front seat. Furthermore, they are subjected to less jolting in passing over bumps and to less side sway, making the

reverse transmission gearing, controlled by a single lever in the middle of the footboard. It is of reachless construction, the body is carried on platform springs, wheels are 28 inches in diameter, of either wire suspension or artillery wood type, steering is by wheel, cooling water is circulated by rotary pump, lubrication is by multiple oiler, and the equipment includes continuous fenders over both wheels, wicker baskets on each side, two head lights and one rear lamp and a French horn. The upholstery is in hand-buffed leather and the finish is dark red and black. The weight of the machine complete is 1,100 pounds.

The third of these \$1,400 vehicles is a departure from the usual type, being fitted with a 10 horse power, double cylinder upright motor of the two-cycle type placed under the hood, which also covers an ignition dynamo and the circulating pump. The engine drives to a planetary transmis-

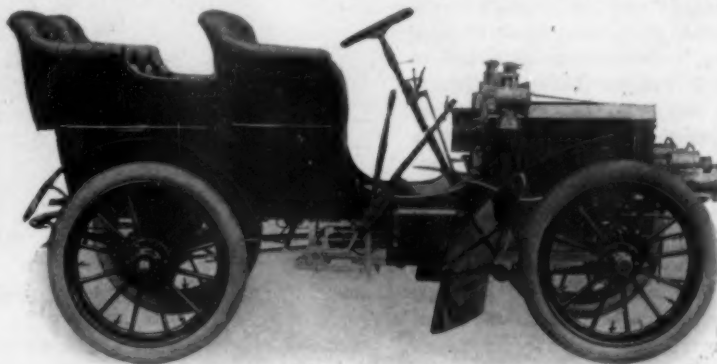
sion supported on semi-elliptic springs. Wheels are of artillery wood type, 30 inches in diameter and fitted with detachable tires. The wheelbase is 77 inches long and the tread 56 inches wide. The seats are all roomy and comfortable and are upholstered in good leather, the finish is maroon



25-H.P. TONNEAU, HORIZONTAL MOTOR, MERCEDES HOOD — \$3,500.



12-H.P. VERTICAL MOTOR TOURING CAR WITH TOP — \$2,850.



MOTOR FRONT TONNEAU WITH SHAFT DRIVE — \$3,000.

surrey probably the most comfortable of all the open, four- or five passenger motor vehicles. This type is cooler also for those in the rear seat in hot weather. The man

ically. The motor is of 20 horse power and is carried on a frame that is independent of the body and is yet spring supported on the front axle. The body itself is

the purpose, leaving a wide opening at the back for ingress and egress. It seems hardly necessary to state that the finish and upholstery are handsome and luxurious.

**\$2,500 to \$3,500.**

Desire of the automobilist for greater power and speed has been the incentive for the American manufacturer to increase the size of his product year after year to rival those of foreign manufacture, until to-day pleasure and racing cars are made on this side that are quite as high-powered as those imported from France and Germany, and, it is hoped for the honor of the nation, as fast as those special cars against which several American racing machines are soon to be pitted in the Gordon Bennett cup race over the Irish course. Yet despite the magnificent and unprecedented efforts of the manufacturers to meet and keep pace with this demand by the annual doubling and tripling of their productive capacities and the entrance into the field of new builders in remarkable numbers, it has been almost impossible to supply these large touring cars fast enough to fill the orders that have multiplied yearly as the automobile grows in popularity. Men of means and some leisure find great delight in owning and personally driving the simple American touring car of from 12 to 20 horse power capable of a speed of thirty or more miles on good, level roads and of climbing all grades likely to be encountered when touring, with four passengers aboard. The great popularity of such machines is in no wise reduced by the fact that they are so simple in construction and operation and so moderate in price as compared with foreign cars of the same power and capacity.

For \$2,500 the enthusiast can take his choice of a number of particularly popular



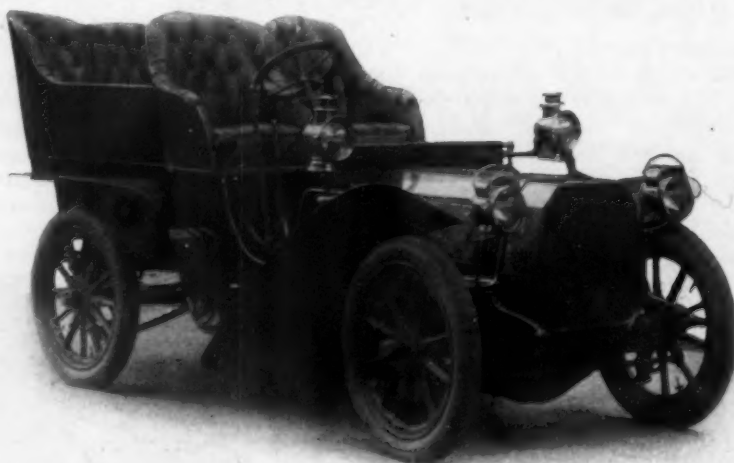
**MOTOR FRONT CAR WITH LIMOUSINE BODY — \$4,800.**

who wants to drive his own car and with his family enjoy a thoroughly comfortable day's ride over rural highways, can secure a surrey of from 10 to 13 horse power, weighing 2,000 pounds and having a speed capacity of fifteen to twenty miles on good roads, for \$1,800. The engine is of the double cylinder, balanced type, placed within the body at the rear. A transmission gearing of special design affords three forward and one reverse speed change, and the engine can be throttled for intermediate speeds. The wheels are of wood, of 36 inches diameter and fitted with large tires, thus further contributing to ease in riding. The body is built with a front hood covering one of the tanks, and a hand wheel is provided for steering. The springs are full elliptic and tubular reaches connect the axles. The seats are extra wide and comfortably upholstered in leather, and of course the material and workmanship throughout the vehicle are of good quality.

#### **LOW PRICED HIGH-POWERED TONNEAUS.**

Probably the lowest price for which one can possess himself of a full-fledged tonneau car incorporating a four-cylinder vertical motor, placed at the front under a hood and driving by the latest system of longitudinal jointed shaft is \$2,000. Such a vehicle, of American manufacture is offered this year. It has many novel features, some never before used on automobiles, one of which is a unique transmission system directly connected with the differential on the rear axle. The forward speeds and reverse are obtained by means of friction clutches and spiral gears housed in a casing which also encloses the differential. The motor is controlled by throttle and spark advancer, giving, with the gear changes, a range through all speeds up to forty-five miles an hour. All valves are operated mechan-

carried on four leaf side springs. The hood is of the Mercedes pattern and the radiator is of the true honeycomb type, containing 3,000 tubes of hexagonal instead of square section. No water tank is used, and only two gallons of water is carried in the circulation system. The steering wheel is mounted on a column that telescopes, one part sliding on another so that the wheel can be pushed down out of the way when the driver leaves or enters his seat, or can be adjusted to any height to accommodate the physical peculiarities of different operators. The seats are wide enough for three persons, and the front seat will be furnished single or divided as preferred by the purchaser. A novelty in the tonneau seats, peculiar to this machine, is that instead of a rear door the tonneau body portion is divided



**AMERICAN REPRODUCTION OF FRENCH TONNEAU — \$5,000.**

down the middle and the halves are so pivoted at the front that they can be swung sidewise by means of a lever provided for

tonneau cars built to meet the foregoing requirements; and, though serving the same purpose, they are quite different from one



another not only in outward appearance, but in most of their essential characteristics. One of the leading makes is driven by a large single-cylinder motor of 12 actual brake horse power, disposed horizontally under the middle of the body; another exceedingly popular car has a 20 horse power two-cylinder, opposed motor under the middle of the body; others have 12 and 16 horse power twin-cylinder vertical motors placed under the hood in front, while others have two-cylinder, double piston and four-cylinder horizontal motors located respectively under the middle of the car and under a hood in front. No general description, therefore, can be given as applying to any of these machines as a type. The purchaser must satisfy himself or, if he is not thoroughly posted in the construction and mechanical niceties of automobiles, should avail himself of the experience of those who are, just as he would be likely to do if he were about to buy an equally expensive span of horses and victoria, landau or barouche, or to make any other investment of equal amount in a direction in which he were not posted.

It may be stated in general that the cars at these prices are superior machines eminently suited for hard service over all kinds of roads, in the mountains and on the plains, for jaunts of 75 to 100 miles or more in a day or for tours of 1,000 miles with two, three, four or five persons. They are large to the degree of being imposing; they are attractive in design, handsome in finish and luxurious in upholstery, their tonneau bodies are roomy and supported on long, flexible springs that contribute the utmost ease in riding; the material and workmanship in them is generally of high class, so that they are efficient and durable, yet they are so simple in operation and control that the average buyer does not require the services of an expert mechanic to drive them. The wheel

wood artillery pattern, 32 to 36 inches, and are fitted with heavy detachable tires 3 1-2 to 4 inches in diameter. The frame is of the rectangular platform pat-

operated by hand or foot, and by the spark advancer. The gasoline tank, carried under the front hood or front seat, has capacity for a run of 150 to 200 miles.



24-H.P. MOTOR FRONT CANOPY TOP CAR — \$4,000

tern now so universal and is built of angle steel reinforced with steel plates riveted to it or of a combination of stout wood armored with steel. The entire body is removable from the frame and the tonneau seat portion is easily detachable when it is desired to use the car for one or two persons and to lighten it. The front seats are made individual and are also removable. The transmission system may be of the planetary, sliding gear, or individual clutch type, but in any case it affords either three or four forward speeds and reverse motion, operated by side lever. Irreversible wheel steering is, of course, employed, and in many cases the wheel tilts forward to facilitate the entrance and exit of the operator. Powerful emergency band brakes are fitted to drums on the rear wheels, to supplement the regular brake on the differential or transmission, and are usually set by a hand lever. The engine fre-

Ample fenders are fitted over all wheels, and the equipment further includes two, three or four lamps and a full kit of tools.

Of a number of American tonneau cars in the market for 1903, listing at \$3,000 and \$3,500, one is of the American type, with a 25 horse power, double-cylinder opposed motor, placed horizontally in the middle of the frame; another has a similar motor located forward under a hood, and others follow much more closely the foreign style of construction, having three and four-cylinder vertical motors of 18 horse power under the front hood and driving by jointed shaft to the differential on the rear-axle, or to a counter-shaft that in turn communicates the power by two side chains to the rear wheels. The transmission system is either sliding gears or individual clutch gears, giving three or four forward speeds up to forty miles. All gears, differential and working parts, are carefully protected by casings, usually of aluminum, against the intrusion of dust and dirt. These cars have a wheel-base of from 84 to 96 inches, standard tread, and weigh from 1,800 to 2,600 pounds. These cars are designed to meet the same requirements as the \$2,500 touring cars just described, and much that pertains to the latter applies also to these, the main difference being in the close resemblance of the \$3,000 and \$3,500 tonneaus to the French machines in the form of engine and transmission used. The French are acknowledged to be the leaders in the matter of design and construction of motors and transmission, and American builders of heavy cars have not hesitated to give their own countrymen the benefit of such foreign ideas at lower prices than those for which the French and German products can be imported. Externally these cars look much like the previous ones, but in this case the hood actually covers an engine,



AMERICAN CHASSIS WITH FRENCH BODY — \$8,500.

base is 80 to 88 inches and the tread of standard width. The wheels, set on heavy solid steel axles, are themselves of heavy

quently has a governor for automatic regulation, but the speed can be increased or diminished at will by means of a throttle,

which was the original excuse for its existence. In the matters of efficiency, durability, beauty and complete appointment, all that was written of the preceding touring car applies to them. A great advantage possessed by the motor-front type of car, is the instant accessibility of the motor, with its valves, spark-plugs, carbureter and crank-case, by the raising of the hood on its hinges. In a tonneau type of car, the motor in front tends to distribute the weight equally on all wheels. Another notable characteristic of the \$3,000 and \$3,500 touring cars is that the radiators, which are of large size, are carried conspicuously in the front of the hood, like the Panhard or Mercedes machines, according as the flange or honeycomb radiators and the tapering or square hood are used.

#### PROTECTION FOR THE RIDERS.

All of the tonneau touring cars described are open vehicles. Many motorists, however, want protection in wet or hot weather, especially on long rides through thinly settled country where shelter is not likely to be close at hand in case of sudden rain. While most of the tonneau cars can, on special order, be fitted with canopy tops and side curtains, not many of them have up to the present time been regularly offered so protected. Several were, however, exhibited at last winter's national shows, two of which are presented among the accompanying illustrations. One of the lowest priced of such covered cars, listing at \$2,850, is a 12 horse power car with a double cylinder vertical motor in front and the other features of the foreign tonneau type. The top is of heavy brown canvas and waterproof material supported by rods bolted to the body, and the side curtains, of the same material, roll up out of the way when the weather is clear. The operator's seat is inclosed with the rest, a square glass fitting over the dash shutting out all wind and dust or rain from the front. This glass can be removed when the going is pleasant. Such a top, adding about \$350 to the cost of the tonneau, is attractive in appearance and increases the comfort of the passengers many fold.

**\$5,000 to \$9,000.**

Americans desiring to possess the very best that is obtainable in automobiles, and having the means to gratify this ambition, have until within the past year or two found it expedient if not altogether necessary to make their purchases abroad or through American agents for European machines. But our own makers, observing that a home market exists for power vehicles embodying the very best in material, workmanship and luxurious design and upholstery, are now offering automobiles rivaling the foreign power vehicles in these respects, and, through the saving of the 45 per cent. import duty, at

considerably lower prices. One of the leading American companies makes a specialty of furnishing the chassis, or running gear, frame and power plant complete, ready for the attachment of a body, but leaves the matter of the body to the purchaser, who can have one designed especially to suit his own ideas and finished to please his individual taste. The chassis has a 16 horse power, four-cylinder upright motor carried at the front under a taper hood and transmitting by means of a cone clutch in the fly-wheel and a four-speed sliding gear system to a counter shaft from which drive is by two side chains to the rear wheels. The price of this chassis, without any equipment whatever and no plating, is \$3,200. The company will, if desired, supply the body, either a King of the Belgians tonneau for five persons or a limousine enclosed body for six or seven persons, both made of aluminum and very handsome in form. The weight complete, with the tonneau body, is 1,600 pounds. Fitted with the limousine body and fully equipped with lamps, horn and tools, the price of the car is \$4,800, making it the cheapest inclosed automobile of this style now obtainable. As individual taste often requires slight changes, the cost may be brought up to \$5,000 or a little more. The front seat of the limousine body is very wide and is not divided, so that it will easily seat three persons. The back seats are entered from a door in the rear and are placed vis-a-vis instead of in the manner usual in the double phaeton or tonneau. Four persons may be carried in the rear portion. The windows are of heavy plate glass, and may be lowered to leave the sides and front partly open. A railing at the top is for the purpose of securing hampers or traveling bags in place while touring.

#### CHASSIS SOLD SEPARATELY.

Another American car that is an acknowledged copy of one of the leading French cars is also furnished in the chassis alone when desired. It has a four-cylinder upright motor in front, of 16 horse power and has a maximum speed of forty-five miles an hour on good roads. It will be fitted with a body by the makers if preferred, the body being of the tonneau type with very high, comfortable and luxuriously upholstered seats for five passengers, the front seats divided. The price of the chassis is \$4,000 and the body and equipment adds \$1,000 more to the price. The weight of the vehicle is 1,900 pounds. Nothing is left undone to make this car modern and perfect. The body is hung low on long, easy springs and the hood is of the Mercedes pattern with honeycomb radiator in the front.

#### HIGH-COVERED CANOPY TOP CAR.

One of the best and handsomest American touring cars, fitted with canopy top, side curtains and removable glass front, can be purchased for \$6,000. This is of the tonneau type, with a hood closely resembling

the Panhard, the radiator coil protruding from the front. The motor is a four-cylinder engine of 24 horse power, located at the front and developing power enough for a speed of thirty miles an hour and for climbing all ordinary hills met in touring, on the second speed gear, and all grades met in any road on the low gear. The transmission gearing is of a special type in which each set of gears has its own individual clutch and which is noiseless in operation, there being no sliding of gears into mesh while in rotation. The springs are extra long and the upholstering very luxurious. The motor and all the working parts are placed sufficiently high so that in traveling over American roads there will be no danger of any vital part striking stones, stumps or ridges. The drive is by two side chains from a jack shaft. The fenders are continuous and ample, and the equipment includes in addition to the canopy top with its curtains and front glass, two side hampers of rattan, a golf basket at the rear, two oil side lamps, two front acetylene head lights, a small rear lamp and a 4 1-2-inch French horn with long, flexible metal tube.

#### THE ACME OF AUTOMOBILE LUXURY.

The cost of the highest priced American automobile stops just short of the \$10,000 mark, the two most expensive listing at \$8,500 and \$9,000. The former is a 25 horse power car of the latest pattern fitted with a handsome limousine body made of aluminum and itself adding more than \$1,000 to the price of the chassis, which, with tonneau body, is listed at \$7,500. The four-cylinder vertical motor has a ball governor controlling the inlet valves and the ignition. Sliding gears are used for transmission. The wheel-base is 94 inches long, the half elliptic springs are of unusual length and the wheels are 34 inches in diameter and fitted with 4-inch detachable tires, so that, with the luxurious cushions and upholstering of the body the utmost possible degree of comfort in riding is assured. In every respect such a car is superior to the most magnificent and comfortable horse-drawn vehicle built, and rivals in luxury any form of land transportation known, not excepting the palace car of the steam railroad, whose riding qualities have become a figure for comparison throughout the land.

#### NEW CENTURY TRANSPORTATION.

Thus is the acme of comfort in automobiling reached in scarcely more than a decade after the earliest successful experiments were made in the United States with the crudest of vehicles. With its easy swinging motion, absence from vibration, noise and odor, its high speed and great power, its beautiful lines and superb finish, and the absolute protection afforded by the inclosed body, nothing is left by such a vehicle for the critic of the new century form of transportation to find fault with.



## "Star" Gordon Bennett Cup Racer.

### Details of the New Machine Built on Panhard Lines for a Place On the English Gordon Bennett Cup Team.

*Staff Correspondence.*

LONDON, April 5.—At the Agricultural Hall, on the stand of the Star Co., at the eleventh hour, I was able to glean a few particulars with regard to the construction of their Gordon Bennett cup car. Her wheels, which are of course artillery pattern, are 34 inches in diameter, shod with 3 1-2 inch Dunlop pneumatic tires. The wheel base is exactly 9 feet and the wheel gauge 4 feet 6 inches. The frame is of the ordinary flitch plate description, with an

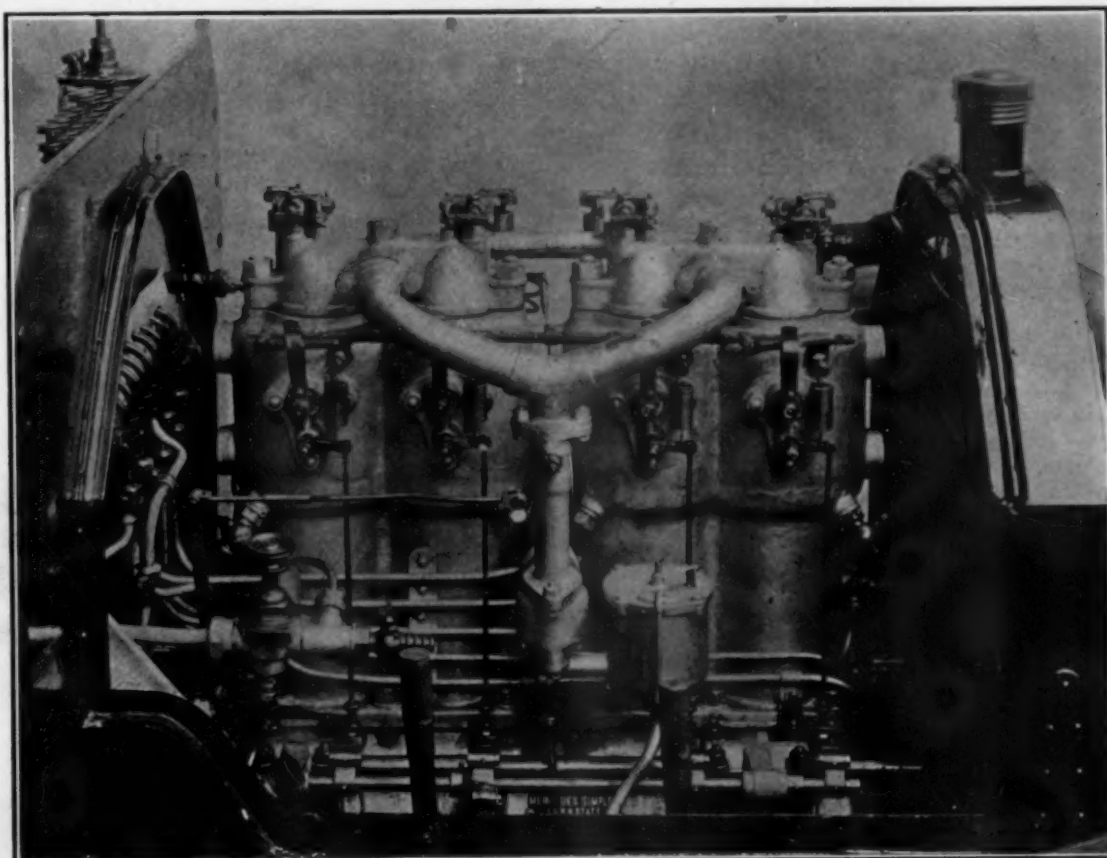
central pair of cranks are set at 180 degrees with the outer pair. The flywheel, which also forms the female portion of the clutch on its rearward face, is 23 inches exterior diameter, and weighs 90 pounds. The web and boss of this flywheel are comparatively light, nearly all the weight being thrown into the rim.

The change speed gear gives but three speeds forward, but greater variation is not required over the Irish Gordon Ben-

taken of this fact to insure perfect lubrication throughout. The crank shaft is 2 1-2 inches in exterior diameter. The valves, both induction and exhaust, are all mechanically actuated, and are 2 1-2 inches in diameter, with 3-8 inches lift. The normal speed of the engine is 1,000 revolutions per minute, but upon acceleration it will run at 1,500 revolutions, when the constructors claim, much more than the normal horse power will be given off.

I note that certain of the inconsequent dailies talk about 100 horse power, but I am personally sceptical as to this.

A home made form of Mercedes cooler is used, and the rotary circulating pump, which is placed directly beneath the bottom of the cooler, which entirely fills up



*Photo by Archer*

**MERCEDES, 1903 MODEL, FOUR CYLINDER ENGINE.**

*Note mechanically operated inlet valves on cylinder heads, also double ignition system.*

angle-steel underframe carrying base chamber of engine and gear box. Both of these are of aluminum.

The engine has 4 cylinders with stroke of 6 inches and bore of 6 inches. Each cylinder, with its valve chambers and water jacket, is a separate casting and is bolted to the base chamber. Quite a quarter of an inch separates the cylinders one from the other. Suitable webs cast on the base chamber carry three internal bearings to the crank shaft, which, with the two external bearings, make five in all. The inner bearings are 5 inches and the outer bearings carried on the walls of the gear box are 7 inches in length. The

net course, as, except for one hill and starting, it is not likely that the competing cars will ever be off their top speed from the start to the finish of the race. In construction the clutch is similar in all regards to that of the latest 15 horse power Panhard, inasmuch as it has its drawrod running through the center of the clutch shaft, the rod being actuated by the clutch pedal from the rear of the gear box. It will thus be seen that there is no flexible joint between the clutch and the gear box, a feature which I think is rather to be regretted.

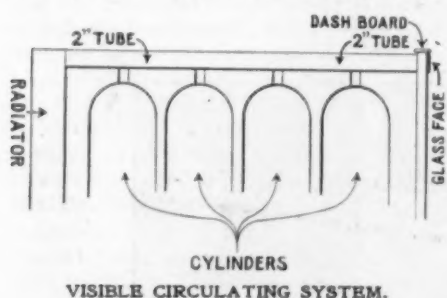
The crank, clutch and secondary gear shafts are all hollow, advantage being

the forward panel of the motor bonnet, is gear-driven off the half-time shaft. The latter, with its valve actuating cams, is set entirely within the base chamber. With the exception of the ball thrust bearing to the clutch plain bearings are adopted throughout the car.

The road wheels are driven off the ends of the countershaft by what appear to me as particularly light roller chains for the job. They are what is termed here 1 3-4 inches by 1-4 inch chains; that is to say, they are 1 3-4 inches in pitch and have the rollers bearing on the sprocket teeth but a quarter of an inch wide. The Star Motor Co. has in this reduction of chain width

deduced from its extensive cycle practice, but whether rightly or wrongly remains to be seen. The side links of the chain, which are of course in tension, and the rivets passing through the sleeves and rollers, which are subject to shearing chain, are, if anything, more robust than usual, so that the only point to suffer is the thickness of the sprocket teeth.

The Star people feel pretty confident that they have done the right thing, and I only hope they have, although I am bound to say that the huge sprocket wheels looked weak to me laterally. The chains themselves are by Messrs. Brampton Bros. The total weight of the chains,



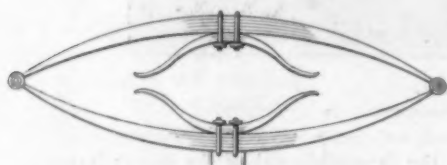
chain wheels and chain rings is only 36 pounds.

The engine complete turns the scale at 672 pounds, while the gear box and gear weighs 106 pounds.

A somewhat novel feature is introduced into the cooling arrangements. From the top space of the tank a 2-inch pipe runs back to the dash board. This pipe is connected by short lengths of rising pipes from the crown of the cylinders, and the horizontal pipe passes through the dash board and has its end there closed in with a thick plate of glass through which the progress of the circulation can be observed. By means of this tube one gallon of water is always kept above the cylinder heads.

#### COMPOUND SPRING ARRANGEMENT.

In order to prevent abnormal springing of the fore part of the car the upper and



under sides of the forward elliptic springs are provided with small laminated check springs which come into play when any extraordinary shock is experienced, and avoid all violent blows or too great a compression of the main springs.

The speed at which it is claimed the engine, running at 1,000 revolutions per minute, will drive this car on the level is 75 miles an hour. It is admitted on all sides that the Star Motor Co. deserves the greatest praise for the courage and energy shown in getting out this car,

when other and more important English concerns refused to toe the mark.

Something yet remains to be done with regard to this vehicle, however, for it is undeniable that the rear axle and the steering arms are too light. They are, I believe, to be replaced by heavier ones, and as the car as it stands is still 20 pounds under the 1,000 kilogrammes, and more weight can yet be saved by making several minor parts, such as tank caps, handles, etc., etc., of aluminum, in lieu of brass, as at present, there is still ample margin.

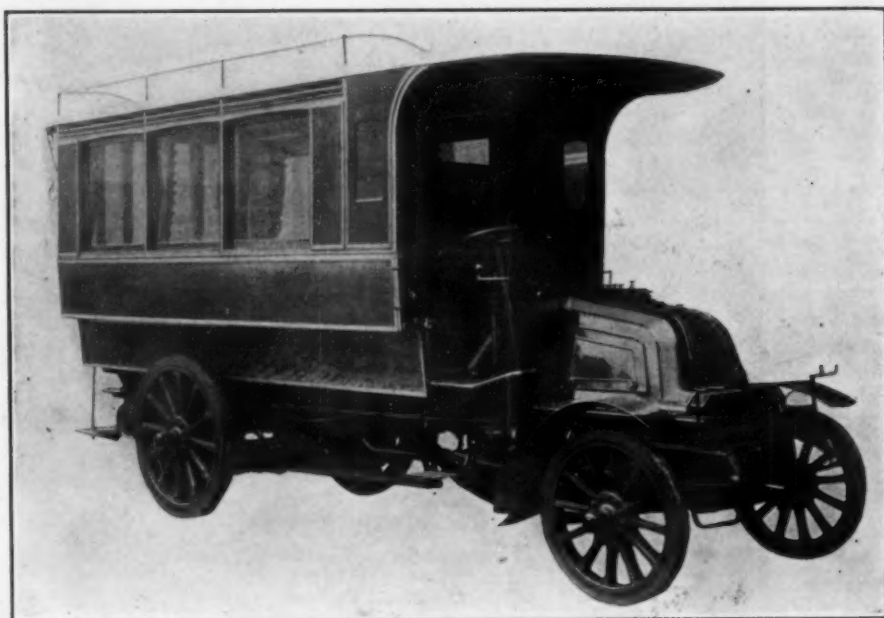
All the English cars to take part in the eliminating trials must be at the Automobile Club garage at 12 noon on Friday next for examination, and any car not complying with the G. B. conditions will be disqualified without further ado.

The fund which is being raised for the perfection as far as possible of the G. B.

conduct of automobiles in the Green Isle during the Irish fortnight.

#### CARS FOR COUNTRY ESTATES.

The great landed proprietors who entertain largely for shooting at their country seats, have not been slow to avail themselves of automobiles for the purpose of conveying members of their house parties, together with beaters when necessary, to shoots on distant points of their estates. The Duke of Portland, who is the owner of that renowned demesne in the Dukeries known as Welbeck Abbey, and whereon is the flying kilometer course over which the Hon. C. S. Rolls drove his 80 horse power Mors in 27 seconds dead, recently, owns two shooting cars purchased from the Milnes-Daimler people, and driven by a 16 horse power engine through Panhard type of change speed gear, and propeller shaft on-



MILNES-DAIMLER PUBLIC SERVICE CAR WITH GOODYEAR TIRES.

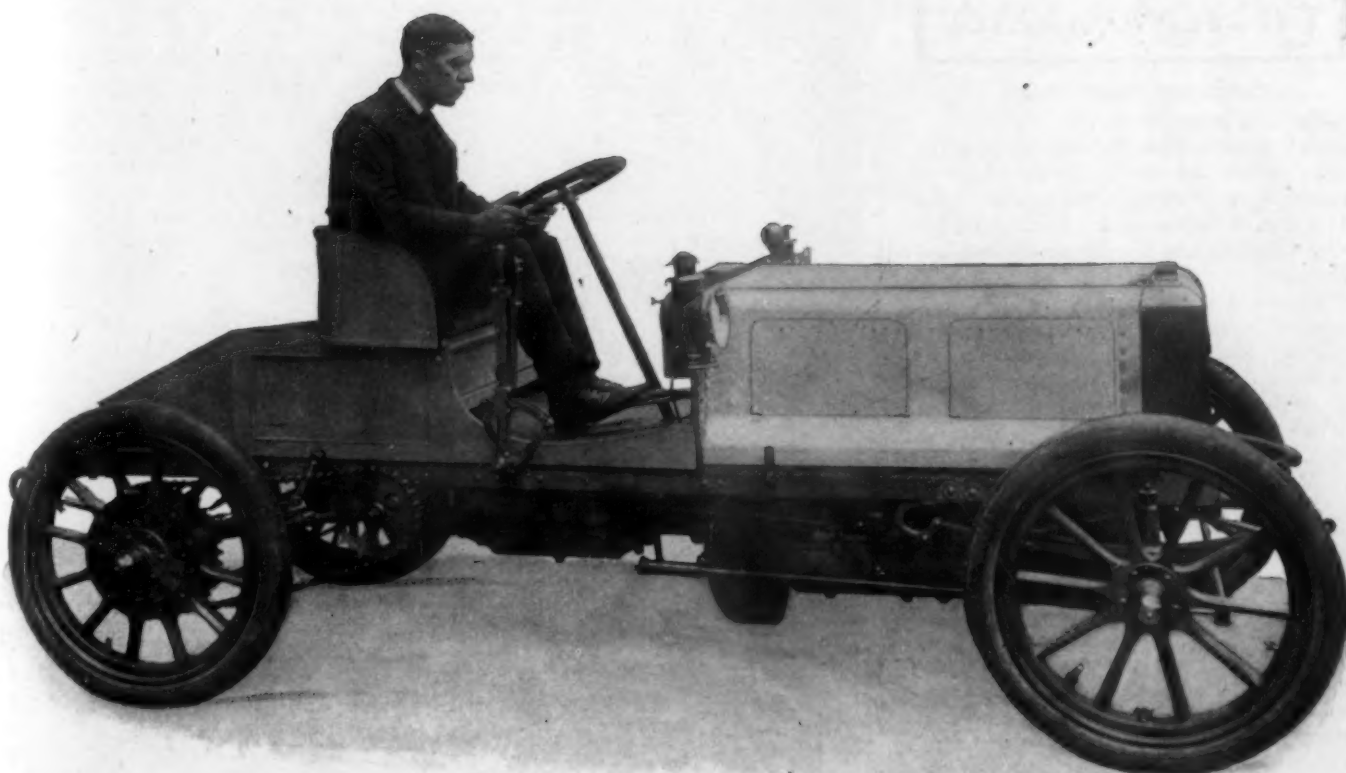
course already amounts to £607 13s., but it is considered that quite £1,000, if not more, will be required. As this is all for the good of old Ireland, for which much American sympathy is expressed, I have no doubt that contributions would be gratefully received from your side.

I note that a letter has been received by the Automobile Club from the Automobile Club of America demurring to the suggestion that any competitor driving over the Gordon Bennett course on a car capable of a speed of over 40 miles per hour, should be disqualified. As none of the other competitors will do this, and as suitable cars will be provided for your representatives to drive over the course on, it is to be hoped that your club will see its way to acquiesce in our suggestion. We may require to run the race again in Ireland, and the fate of another permissive bill depends very largely upon the

to pinion-bearing counter-shaft, as I have described in connection with other vehicles turned out for heavy traffic by this firm. The accompanying illustration gives a very fair idea of the body design and equipment of this vehicle, and shows how the depending curtains make all snug in bad weather. I should like to draw attention to the fact that the tires upon which these ponderous vehicles run are Goodyear solids, and that the Duke's chauffeur has nothing but praise for them.

William Otis Gray and Francis Gray, two Boston automobilists, sailed for Paris recently to tour Europe this summer in a French touring car. They will start from the French capital, first going through southern France into Spain, then by steamer to Italy, thence to Greece and Turkey and back via Austria, Germany and the Netherlands.





*Photo. by Archer.*

**SEVENTY HORSE POWER STAR GORDON BENNETT TRIAL CAR.**

Built by the Star Motor Company of Wolverhampton, England. Mr. Lisle, Jr., who will drive the car on the trials, is shown at the wheel.



*Photo. by Archer.*

**FORTY HORSE POWER NAPIER GORDON BENNETT TRIAL CAR.**

Built by Napier & Son, Westminster, England. The Car will be driven by Charles R. Jarrott, who is shown at the wheel. The designer and constructor, Montagu S. Napier, is seated beside him.

## Correspondence

### British and French Shows.

Editor THE AUTOMOBILE:

Sir:—I have read with the very greatest interest the article of your correspondent from Paris in your issue of the 14th inst. in regard to the comparison between British and French automobile exhibitions.

I know it is the fashion on the Continent to discredit anything from any other country whether it be in the shape of automobiles or in the exhibitions pertaining to them or anything concerning them, but at the same time I would like to mention that in the comparison which your correspondent makes between the Paris Salon and the Palace Exhibition he has, I think, allowed the Parisian air to warp his judgment.

It was contended that the Crystal Palace Exhibition was the greatest exhibition of automobiles that has ever been organized and in spite of the statement of your correspondent I do not think that this alters the fact. He admits that the Crystal Palace is a larger building than the Grand Palais and when one remembers that the whole of the Crystal Palace was filled so that no more room could be obtained, one can readily understand that the exhibition from a size point of view alone equalled—if it did not excel—the Paris Salon.

The great feature of the Crystal Palace Exhibition was the enormous number of various makes of machines shown, whereas in Paris all the exhibits were French with the exception of three English exhibits, one or two German and one or two other makes, and one could not say that the Show was representative, as the various countries that have taken a leading part in the building of automobile vehicles were not properly represented.

At the Crystal Palace, on the other hand, we had the whole of the English manufacturers exhibited and at the same time all the leading French firms had established important agencies in England and were showing their vehicles; Germany likewise, Belgium and Italy, and America had a number of her most important makes, being shown by some of the agencies in this country. Therefore, at the Crystal Palace Exhibition it was possible to obtain a good idea as to what was being done by the various countries and it was possible to form comparisons in a manner and with opportunities not obtainable at the Paris Salon.

Of course your correspondent makes a mistake in saying that 800 firms exhibited at the Paris Salon. I think he will find somewhere about 200 or 250 was nearer the mark.

This, of course, is only in regard to the exhibitions themselves.

I am very interested to learn the im-

pression on the mind of someone absolutely outside the English industry as to the individuality which the British manufacturers are showing in the construction of their vehicles. He very rightly states that the question as to it being right or wrong has yet to be decided, but I think it must be agreed that the evolution of the perfect motor carriage can only be obtained quickly where a number of manufacturers are experimenting in different directions. English manufacturers are not modeling their commercial vehicles on racing lines—the policy adopted by all manufacturers on the Continent—but have, on the contrary, realized the requirements of the ordinary English user on ordinary English roads and have set themselves out to supply such a user with the carriage which will give him every satisfaction without sacrificing strength, quiet running, reliability, etc., to the mere question of speed. This point is very rightly touched on by your correspondent. I would most emphatically combat the statement that the British manufacturers are at least two years behind the French. Although strides have been made in France during the past year, I think the gain England has made in the same time has been so very much greater in comparison as to warrant my saying that at no time was the supremacy of the French industry so strongly threatened as at the present.

The winning of the International Trophy from them last year was a severe blow, and the benefit of this has been appreciated in England during the past year, and the reputation of British built carriages has gained a great deal and the English user realizes that it is possible to get a reliable, comfortable carriage equal in every respect to a foreign production and yet made in England, and as the average Britisher is nothing if not patriotic, I think that in the statement that we have lost ground, your correspondent hardly states the case fairly.

I trust you will pardon the length of my letter, but the whole article was one which interested me very much indeed, and if I may not agree with all the sentiments expressed, nevertheless I feel that in the interchange of opinions one can learn very much as to the reasons for, and the results of, some of the important moves in the automobile world.

CHARLES JARROTT.

London, England.

We quite agree with Mr. Jarrott that "interchange of opinions" is an excellent thing in automobilism, and take pleasure in publishing his letter as the expression of an acknowledged English expert on the subject. Opinions and facts, however, do not always coincide, even though the opinions may be based on honest convictions. It is not outside the range of possibility that London fog may have obscured the judgment of Mr. Jarrott to

the same extent that he fears Parisian air affected that of our correspondent in France. We are not prepared to dispute the question of comparative floor areas of the Crystal Palace and the Grand Palais, as we have no exact measurements, but off-hand we do not think that the Crystal Palace floor space would equal that of the main floor of the Paris Salon plus the areas of the annex and galleries. About the number of exhibitors at the respective shows, Mr. Jarrott does not query the statement that there were 185 firms represented at the London show—at the Paris show there were 747 exhibitors by actual count. As to countries represented at Paris, there were in addition to the French makers, exhibits by the leading German and Belgian builders and Italy and America were also represented. As to the latter we freely admit that the American section, though worthily represented by one concern, was a wretchedly inadequate representation of the condition of the industry in this country, and that our manufacturers lost a magnificent opportunity to show the automobile world the advantages of the unique American type of car. Judging English cars, as a whole, by the experiences had with them on this side of the Atlantic, we would be inclined to accept the views of our Paris correspondent without question. The automobile industry is, however, not to be judged by past performances and as no country has a mortgage on brains it is not improbable that the English builders will yet give the French "a run for their money."—ED.

### Some Racing Dangers.

Editor THE AUTOMOBILE:

Sir:—While the precise cause of the disaster in which Count Zborowski met his death is still the subject of conflicting reports, it seems to me that the immediate lesson of it appears from the fact that hill-climbing races have for the future been forbidden on the crooked course of La Turbie, to have been well learned. With the augmentation of speeds, possible causes of disaster of various kinds have appeared, which no one thought of when twenty or thirty miles an hour was fast going. Of these, some, particularly the centrifugal force on a curve and the physical impossibility of the driver correcting more than a limited deflection, due to a stone or rut, before his car has landed in the ditch, are inherent in the speed itself, and can be corrected by no modification of design. For this reason, I believe, they are likely to impose the ultimate limit on increase of speed, and they therefore deserve serious attention by those interested in or responsible for racing events.

If a car is traveling at the speed of a mile a minute, its velocity is 88 feet per second. If, through striking a stone, gully or other obstacle, or through the bursting of a tire, its direction be changed





Photo. by Branger & Doye.

COUNT ELLIOTT ZBOROWSKI AT THE WHEEL DURING NICE RACES.

5 degrees, it will diverge from the line of its original course at the rate of 7.2-3 feet per second. It cannot, on account of its momentum, receive such a change in direction instantaneously, but this very fact, instead of safeguarding the driver, may be his undoing, by reason of the tires starting to skid and rendering the machine for the moment wholly uncontrollable.

The formula for centrifugal force is:

$$F = \frac{WV^2}{gR}$$

in which  $F$  is the centrifugal force, measured in pounds, and having its direction radial to the arc of motion,  $W$  is the weight in pounds,  $V$  the velocity in feet,  $R$  the radius of motion in feet, and  $g$  the acceleration due to gravity, or about 32.2. The coefficient of friction of rubber on a smooth road is, I believe, between .6 and .7. With a rapidly-rolling wheel the lower figure would be quite high enough. This would indicate a centrifugal force of 1,440 pounds for a 2,400 pound machine, as that which would start skidding. Calculating as before for a velocity of 88 feet per second, I find that the above force would be reached on a curve of about 400 feet radius. Practically the radius could not with safety be less than 150 yards, and even then the slightest slipperiness or looseness of surface might spell disaster. In my opinion so long as such things can be even approximately calculated, no racing committee can be acquitted of duty to exercise full prevision in behalf of contestants who, very often, have to accept

(Continued on page 450.)



Photo. by Branger & Doye.

SCENE IMMEDIATELY AFTER THE FATAL ACCIDENT ON THE LA TURBIE COURSE — See front page.

Baron de Pallange.

Body of Count Zborowski.

## Persistent Rain Spoils Eliminating Trials of Gordon Bennett Racers.

### SUMMARY OF ELIMINATING TRIALS APRIL 14.

**COURSE**—Five miles, at Westbury, Long Island, closed for trials by Nassau County authorities.

**HOUR**—5 to 8 a.m., with guards posted at all cross roads and gates.

**TIME** of Percy Owen, in a Winton Racer, for the five miles—5 min. 55 sec.

**TIME** of L. P. Mooers, in small Peerless Racer—Not announced, but about 7 min.

**WEATHER**—Cold, driving northeast rain, continued from preceding evening.

**CONDITION OF COURSE**—Dangerously wet and slippery. Further trials postponed until

Monday and Tuesday, April 20 and 21, if the course is in suitable condition.

**HARKNESS RACING CAR**—By some misunderstanding not assembled and absent from trials.

**MATHESON RACING CARS**—Not yet completed.

**PERSONS PRESENT**—A. C. A. Racing Committee and President and Secretary, a score of prominent motorists and newspaper men and photographers. Secrecy maintained as long as possible by racing committee.

Owing to the rainy weather of the early part of the week the trials for the selection of two additional representatives of the Automobile Club of America in the coming international race for the Gordon Bennett cup were indefinitely postponed. When the arrangements for the race were first perfected several months ago the A. C. A. named positively as one of the three representatives to which it is entitled Alexander Winton, of Cleveland, at the same time announcing that the other two would be selected by competitive trials in the spring. In pursuance of a policy of secretiveness all official information as to the place and nature of these trials had been withheld, not only from the public, but from the contestants themselves, up to the last moment. The contestants were ordered to report at the club house in New York, with their cars, on April 11, and it was also announced that in making the trials no laws would be broken.

The candidates for cup honors were Percy Owen, of New York, L. P. Mooers, of Cleveland; Henry S. Harkness, of New York, and C. W. Matheson, of Grand Rapids, Mich. At the last moment Mr. Matheson notified the club that the two cars which he was building could not be ready by the assigned date, and requested that the committee visit Grand Rapids, at his expense, and inspect the cars, with a view to an extension of the date of the trials. But this request was declined. This narrowed the number of contestants down to three, with possibly four cars, Mr. Mooers having two.

All through the preceding week conjecture was rife as to the place and nature of the trials, some assuming that they would be held in the West, but up to Monday morning a dense fog of secrecy enshrouded the plans, which were known only to President Shattuck and the racing committee, George Isham Scott, Dave Hennen Morris and Harlan W. Whipple. When these gentlemen, with other officials and members of the club, arrived at what

proved to be the rendezvous, the Garden City Hotel, at Garden City, Long Island, they were warmly greeted by a delegation of newspaper men, already in waiting.

As it developed in the course of the afternoon, the club had secured permission from the local authorities to use a

was seven miles, from Westbury to Merrick, straight with the exception of one curve near the start, and varying in condition from good to fairly rough. This stretch was carefully surveyed and marked by posts at each mile, and all preparations for accurate timing were made by the official timer of the club, H. G. Opdyke.

The hour for the start was 5 A. M., and it was proposed to devote only a couple of hours to the work. Guards were stationed at every cross road and farm gate, and the road was practically closed to all ordinary traffic.

On Saturday Messrs. Owen and Mooers reported at the club house in New York, notifying the committee that their cars were then on the way from Cleveland by express. They were ordered to report on Monday afternoon at Garden City. Mr. Harkness had taken his car from the Brooklyn shop on Friday for a trial run, but the rear axle proved weak and he returned to the shop at once to replace the axle with a new one already provided. Owing to some misunderstanding he did not report at the club on Saturday, and up to Monday night his car was still without the new axle. The Winton and Peerless cars reached New York on Monday morning and were run out to Garden City in the afternoon.

As it finally happened, there was a very pleasant gathering of motorists at the Garden City Hotel on Monday evening, the party including in addition to the committee and Secretary Butler, A. L. Riker, M. I. Budlong, Winthrop E. Scarritt, E.



L. P. MOOERS AT THE WHEEL OF HIS BIG PEERLESS RACER.

section of the public road for a few hours in the early morning for speed trials under such conditions as would remove all danger to ordinary traffic. The road selected

E. Britton and other members of the club.

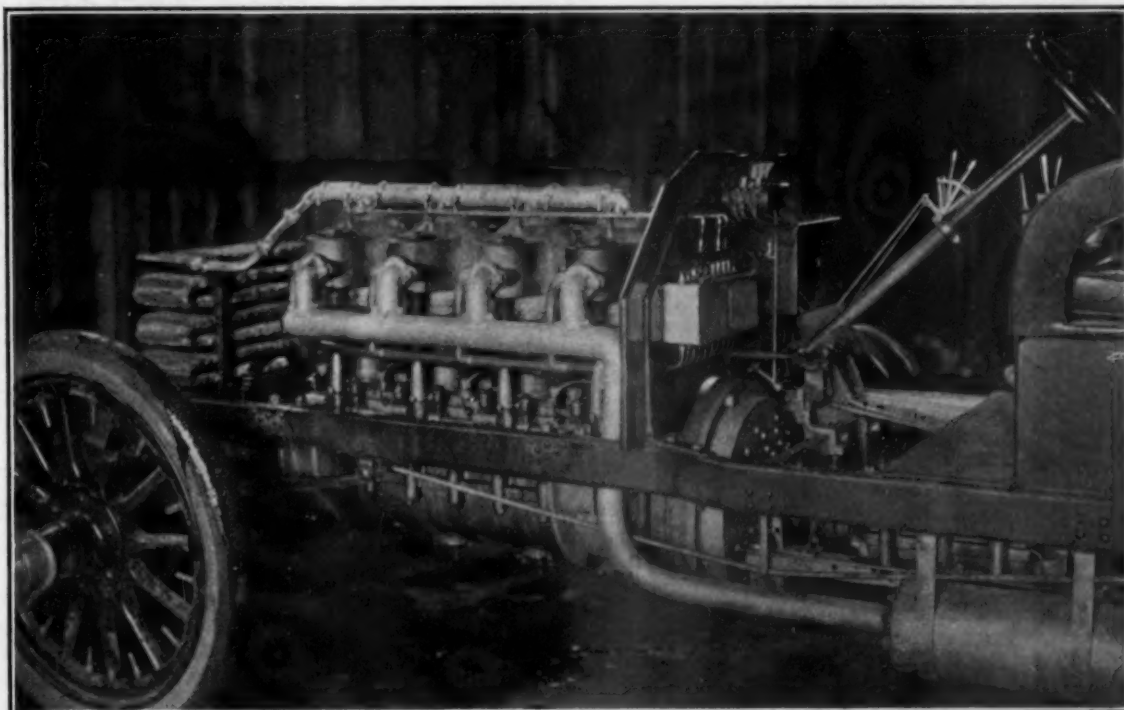
Following a damp and cloudy Monday, with a penetrating east wind, rain began



at night, falling heavily before sunrise. All hands were astir at 4 o'clock on Tuesday, and in spite of the dreary outlook the caravan of racing and touring cars

trials, but two runs over the course showed that it would be impossible to make any satisfactory tests and the attempt was abandoned for the day. Mr.

miles to the Winton quarters in the city. As the rain continued all day and the weather predictions gave no hope of a change before Thursday, all idea of a



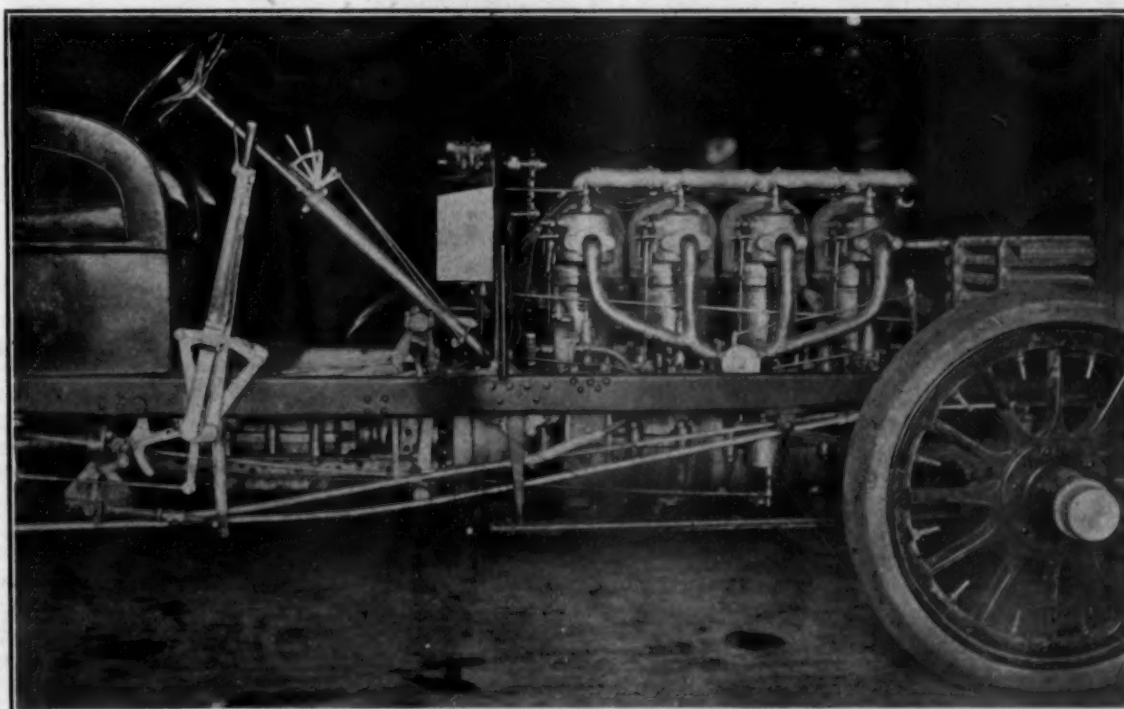
EXHAUST SIDE OF MOTOR AND CLUTCH OF L. P. MOOERS' BIG GORDON BENNETT RACING CAR.

was soon under way for the start, about three miles distant. The low, sandy plain on which Garden City is situated was al-

Mooers covered the five mile course in a little more than 6 minutes, while Percy Owen rode it in 5:55. After the return

second attempt on Wednesday morning was abandoned.

As soon as the road is in suitable con-



INTAKE SIDE OF MASSIVE ENGINE ON L. P. MOOERS' GORDON BENNETT RACER.

ready partly submerged, and as the rain continued with full force it rapidly became worse. The faithful guards were on duty and everything was ready for the

to the hotel most of the party left for New York, the Peerless cars were left in the hotel garage, but Mr. Owen drove his Winton racer back over the twenty

dition, which will be not less than twenty-four hours after the rain ceases, the trials will be resumed at the same hour and

(Continued on page 453.)

# THE AUTOMOBILE

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SATURDAY, APRIL 18, 1903.

## CUP COURSE IMPROVEMENT.

A suggestion made by our London correspondent and printed on another page, that American contributions to the fund now being raised for the improvement of the Gordon Bennett course in Ireland would be thankfully received, is worthy of consideration by all who are interested in automobile sport. He writes that a sum of about \$3,000 has already been raised, and that probably not less than \$5,000 will be needed to carry out the projected road improvements.

It is manifestly to the interest of American sportsmen that the course for the race be put in first class condition. The work done will be of as much benefit to our team as to the teams of the other competing nations. True, the race is to be held on British soil, but it is really what may be called neutral ground, the English teams having to go out of their own territory to compete in the race in Ireland. A larger view of the question will convince any one that road racing at the highest speeds, among English speaking people, is on trial, and that a happy ending to this great event will do much to convince those opposed to road racing that, when undertaken on a good course and with proper supervision, it is in no way objectionable. Should the splendid efforts of our intending competitors are now

making be rewarded by the capture of the cup it would follow that the problem of road racing in this country would come up for immediate solution. The raising of a fund amounting to, say, one-fifth of the total required would be a practical expression of appreciation of American motorists of the work being done by the aspirants for places on the American team.

We will gladly make a contribution to a fund for this purpose and will, if contributors so desire, undertake the collection and payment of the sum to the British race committee. We ask an expression of the views of those interested.

## DOUGHTY-BAILEY BILL.

Among the provisions of the Automobile bill which has been patched up in Albany as a compromise between the old Doughty law with its various amendments and the new Bailey bill, by a conference committee including the president of the Automobile Club of America, and W. H. Niles, counsel for the National Association of Automobile Manufacturers, some of the most remarkable are in substance as follows:

No automobile shall pass a person driving a horse or other domestic animal, or a foot passenger, at a greater rate than eight miles an hour, or a public school during school hours or a church on Sunday at a greater rate than ten miles an hour. On dams and causeways where the roadbed is less than twenty feet wide motor vehicles must slow down to four miles an hour.

In the built-up portions of a town or city where the houses are more than one hundred feet apart fifteen miles an hour is permitted, but where the houses are less than one hundred feet apart the speed must not be greater than eight miles an hour. Even in the country districts the local authorities are permitted to limit speed to twenty miles an hour, which shall be the maximum in their discretion.

No motor vehicle shall run upon any highway within a distance of one-half mile of any post office at a greater rate of speed than eight miles per hour. Upon signs at that distance from post offices there shall appear clearly the words, "Slow down to eight miles!" and also an arrow pointing in the direction where the speed is to be reduced, provided, however, that if the territory beyond the said limit of one-half mile of any post office is built up to such an extent that in the judgment of the authorities having control of such highway or highways speed should be reduced beyond such half mile limit of the post office, then in such case the authorities having charge of such highway or highways may erect such sign posts

at a greater distance than one-half mile of such post office and at the end of such built-up portion of the highway, and thereupon no automobile shall be run within such distance thus established at a rate of speed in excess of eight miles per hour.

Every person driving an automobile or motor vehicle shall, at request or signal, by putting up the hand, from a person driving or riding a restive horse or horses, or driving domestic animals, cause the automobile to immediately stop and remain stationary, and upon request shall cause the engine of such automobile to cease running, so long as may be necessary to allow said horses or domestic animals to pass. This provision shall apply to automobiles going either in the same or in an opposite direction.

No automobile shall pass a person driving a horse or horses, or other domestic animal, or foot passengers walking in the roadway or the highway, or cross an intersecting main highway, at a greater rate of speed than eight miles per hour.

It is impossible to believe that the representatives of the motorists of New York have given their assent to this measure with a realizing sense of what its enactment would mean. We trust that in the interest of fair play for all road users those who have any influence at Albany will use it to consign this extraordinary document to the place where it belongs—the waste basket.

## THE MANUFACTURERS' POOL.

Whether the organization of automobile manufacturing interests which has been formed around the Selden patent, or with the Selden patent as the main motive for action, shall turn out to the benefit or the detriment of the automobile movement, depends evidently upon the measure of liberality and foresight with which the business of the organization, as such, will be conducted, and also upon the amount of energy for progress that will be displayed by each of its members. There is not, from the public's viewpoint, anything deeply inspiring about a league of business men moved by self-interest to take concerted action for enforcing the last whit of their legal rights and thereby excluding others from making good automobiles; but self-protection is an axiom in trade and there should be no complaint if the strongest means rather than weak makeshifts are adopted for effecting it. Pools of patentees have been formed before and have usually accomplished exactly as much as they deserved to accomplish. Where they aimed mainly to stifle competition and hold progress in leash, they were soon split by internal dissension, but better results were attained where the principal idea was that of safeguarding progressive work of dependable



firms by relieving them of worry over rash or incompetent competition. The difference between the two kinds of pools has never been very clearly marked in their terms of organization, but it may perhaps be said that the weaker the patent foundation—that is, the less the patents under control by the pool covered the entrance to the industry concerned—the more inclined to liberality was the pool's administration, and the better the results for its members and for the public. A pool, to succeed, can hardly be as grasping as a trust or an absolute monopoly, but must protect itself by admitting to its circle every newcomer in its field of work who has anything of unquestionable value to offer, and there can be little doubt that the Selden patent association must adopt such a policy of broad hospitality to new men, new capital and new ideas, and that some benefit to the public will flow from its plan to have each of its members share in the use of all the patents possessed by all of them collectively.

In the course of years, it is true, an organization of this helpful nature may be turned into a monopoly pure and simple, but only if in the beginning of its existence it keeps open house and conquers the markets by producing superior values more than by demanding the pound of flesh to which some court decision may entitle it. If the industry and the public of the present day may both be benefited by a patent pool, the future can take care of itself, for after all the life of patents is only 17 years, and the scope of the automobile industry is so immensely broad, the prospects of many new, indispensable inventions and improvements so exceedingly strong, that any association formed now for controlling the destiny of this industry must needs assume the tactics of a regulating and moderating, rather than a governing, body.

#### Commercial Vehicle Trials.

A few modifications will appear in the rules for the commercial vehicle tests of the Automobile Club of America, May 21 and 22, which are soon to be issued. A new class of vehicles to carry 6,000 pounds weight has been added, and instead of requiring the competing machines to carry 75 per cent. of their weight, in dead load, the amended rules specify 50 per cent.

Five classes of vehicles are now arranged for: First, to carry 750 pounds; second, to carry 1,500 pounds (instead of 2,000 pounds as originally decided upon); third, to carry 3,500 pounds; fourth, to carry 6,000 pounds (new class); fifth, to carry 10,000 pounds.

The Lewiston (Me.) *Journal* prints a startling story to the effect that a business man of Auburn, its neighboring city, has "entered into actual negotiations to purchase a gasoline automobile," which "will be the first of its kind that ever came to Lewiston to stay."

## Legislatures Indorse the Brownlow Bill.

Congressman Brownlow, of Tennessee, says his good roads bill has been indorsed by the Democratic Legislature of his own State, and that the Legislatures of Minnesota, Missouri, Alabama and New Mexico have taken similar action. He believes the bill will be indorsed by the Legislatures of every State in the Union, if that is necessary, in order to press upon Congress the importance of the measure.

Following is a copy of the resolution as adopted by the Legislature of Minnesota:

Whereas, the burden of improving and maintaining our highways, according to the general prevailing system in this country, rests entirely upon the agricultural lands and people living in the rural districts, and

Whereas, the State-aid plan for constructing highways, as practiced in the States of New Jersey, New York, Connecticut and Massachusetts, has proven satisfactory in its operation, and has offered a partial solution of the road question in that it distributes this burden of cost so that one-half is paid out of a general fund supplied by the State, and

Whereas, it is desirable to extend this principle of co-operation and distribution of the burden of cost to a still greater extent, so that the Government of the United States shall bear a share of the cost of construc-

tion to be paid out of the general revenues of the United States, and

Whereas, one-half of said revenues, aggregating during the last two years \$1,000,000,000 per annum, is derived from the agricultural States and rural districts, while only ten per cent. of the total amount is appropriated by Congress for the use of said agricultural States and districts, while ninety per cent. is appropriated for public buildings and other uses pertaining to great cities, and

Whereas, the Honorable Walter P. Brownlow, Member of Congress from Tennessee, has introduced a bill in the United States House of Representatives providing for a system of National, State and local co-operation in the permanent improvement of the public highways, according to the provisions of which the sum of \$20,000,000 is appropriated, and the United States Government is to pay one-half of the cost of improving any public highway when requested so to do by, and in co-operation with, any State or civil subdivision thereof; therefore, be it

Resolved by the General Assembly of the State of Minnesota that we hereby heartily indorse said Brownlow bill and recommend its passage by Congress, and that we request the representatives from the State of Minnesota in Congress, and instruct the United States Senators from this State to vote and support said bill.

#### The Pennell Inquest.

*Special Correspondence.*

BUFFALO, April 13.—The result of the inquest into the death of Arthur R. Pennell and his wife, Carry Lamb Pennell, lets no light on the question of whether the plunge in their automobile into the Jammerthal stone quarry, on March 10, that instantly killed Mr. Pennell and proved fatal to Mrs. Pennell, was accidental or a case of suicide. The inquest lasted only one session, at the conclusion of which Judge Murphy simply found that Pennell and his wife came to their deaths in an automobile accident. Failure to call for the testimony of automobile experts is thought by some to account partially for the unsatisfactory findings. The legal representatives of the insurance companies which carried policies on Mr. Pennell's life were disappointed by the result, as the companies will now either have to pay the insurance or fight suits based on the fact that the policies contained clauses releasing the companies in case of suicide.

The principal testimony of the few witnesses called related to the peculiar lingering about in the rain and the apparent indecision of the Pennells just prior to

the plunge. Interest centered in the story of George Dunbar, who saw the automobile take the fatal plunge.

"I was coming home from the works about 5:45 with a man named Lannen," he said. "A bell rang three times and I turned around. When I turned around I saw his hand coming down, as if he had just grabbed for his hat. The machine swayed to the left and I spoke to Lannen of it. It was raining very hard. We both ran over there and when I got there I saw Mrs. Pennell lying back of the machine. I went down into the quarry. Pennell was under the machine. The top of his head was off. His brains lay in one place about five feet away from the automobile."

Dunbar said the automobile did not seem to be going fast at the time. It was all over in a second.

The question of securing lower freight rates and better classification on automobiles in freight service was brought up and discussed at a meeting of the executive committee of the National Association of Automobile Manufacturers April 1. The officers are now devising a plan which is soon to be submitted for the consideration of the members.

## New Automobile Law in Maine.

Maine automobilists are well satisfied with a State automobile law which, in spite of the usual opposition from rural representatives, is very reasonable and shows consideration for both the motor enthusiasts and the general public. A speed limit of eight miles an hour inside the limits of cities and towns, and of fifteen miles outside them is fixed, although it is provided that any city or town may, by special ordinance, allow a higher speed.

A unique clause authorizes city or town officials to designate places in the streets or roads under their charge where, by reason of natural conditions, the meeting of automobiles and horse-drawn vehicles would be dangerous, and requires the drivers of motor vehicles, when meeting a horse in such places, to stop until the horse has passed, and requires the speed to be reduced to four miles. This clause was framed evidently with regard to some of the steep and rocky roads at the coast resorts, such as the famous Cliff Drive at Bar Harbor.

The penalty for violation of any of the provisions of the act is a fine not exceeding \$50 or imprisonment not exceeding ten days.

Maine has never before had a State automobile law, and the ordinances of the various cities and towns were conflicting and unsatisfactory. The present law gives the automobilists of the Pine Tree State a recognized standing and is considered just and reasonable. Fifteen miles an hour is fast enough for the rocky roads of the State, and the establishment of uniform conditions throughout the State will especially please tourists and the summer-resort population which is growing larger every year. Such users of automobiles will no longer need to be posted on the ordinances of every city or town in the State.

### TEXT OF THE NEW LAW.

The new law in full is as follows:

#### CHAPTER 237.

**An ACT to regulate the use of automobiles and Motor Vehicles upon Public Ways.**

Section 1. No automobile or motor vehicles shall be driven, operated, or caused to be driven or operated, upon any highway, townway, public street, avenue, driveway, park or parkway, at a greater rate of speed than fifteen miles an hour, or upon any highway, townway, public street, avenue, driveway, park or parkway, within the compact or built up portions of any city, town or village, the limits of which shall be fixed by the municipal officers thereof, at a greater rate of speed than eight miles an hour, except where such city or town may by ordinance or by-law permit a greater rate of speed.

Section 2. No person driving or in charge of an automobile or motor vehicle on any highway, townway, public street, avenue, driveway, park or

parkway, shall drive the same at any speed greater than is reasonable and proper, having regard to the traffic and use of the way by others, or so as to endanger the life or limb of any person; and racing any such vehicle on any such ways or parks is hereby forbidden.

Section 3. Every person driving or operating an automobile or motor vehicle shall at request and signal by putting up the hand, or by other visible signal, from a person riding or driving a horse or horses or other domestic animals, cause such vehicle to come to a stop as soon as possible and to remain stationary so long as may be necessary to allow such animal or animals to pass.

Section 4. Every such automobile or motor vehicle shall have attached thereto a suitable bell or other appliance for giving notice of its approach, which, when rung or otherwise operated, may be heard at a distance of three hundred feet; and shall also carry a lighted lamp between one hour after sunset and one hour before sunrise.

Section 5. Municipal officers of any city or town may designate places on any streets or ways therein, where, in their judgment, by reason of cliffs, embankments or other exceptional natural conditions, the meeting of automobiles or motor vehicles and horses would be attended with unusual danger. Such designation shall be made by causing the words "automobiles—go slow" to be conspicuously displayed on signboards at the right hand side of each approach to the place to be designated, and not more than one hundred and fifty feet distant therefrom; and an automobile or motor vehicle, before meeting any horse between such limits, shall be brought to a standstill, and shall not proceed, unless by request of the rider or driver of the horse, until such horse shall have passed; and no such vehicle shall pass any place so designated at a greater speed than four miles an hour.

Section 6. The violation of any of the provisions of this act shall be punished by fine not exceeding fifty dollars, or by imprisonment not exceeding ten days.

### OBJECTIONS TO PENDING AUTO BILL IN MASSACHUSETTS.

#### Special Correspondence.

Boston, April 13.—Local automobilists thought they had secured a considerable concession last week when, in the Massachusetts Legislature, the Committee on Roads and Bridges reported favorably a bill to increase the speed limit in this State to twenty miles per hour on country roads and twelve miles in cities and towns. The limit under the existing law has been fifteen miles in the country and ten miles in the city. The motorists were even disposed to accept without much regret the registration and license requirements imposed by the new bill, satisfied to conform with such requirements if they were allowed the extra speed.

But a careful reading of the bill developed the fact that while the measure appeared to allow twenty and twelve

miles, it gave to each city and town the same right to make local restrictions which they have had and used to such annoyance to the automobile folk under the old law. The result is that if this new bill should be enacted, the automobilists would be even more liable than before to have the towns pass regulations cutting down the legal speed within their borders to something like seven or eight miles, as Lenox and Lincoln did last year; and, in addition the automobilists would have to conform to a very drastic series of regulations such as are now unknown in this State.

The only registration and license required under the existing law is for the privilege of using motor vehicles in the parks. A majority of Boston owners take out these licenses, but the new bill makes the license requirement general. Its provisions are about as follows:

Registration with the State Highway Commission of every automobile used in the State, fee, \$5, except for motor cycles, for which the fee is \$2; registration to be renewed every time the automobile changes owners; certificate to be carried on the vehicle, and a number to be shown in a conspicuous place; manufacturers or dealers to be allowed to take out a general registration mark, which may be affixed to any of the automobiles owned or controlled by such dealer and operated under that mark until sold, hired out, or loaned for more than five days.

Licenses for all operators, with fee of \$3 for those wishing to operate for hire, and \$2 for all others; applicants to be subject to examination by the commissioners; licenses subject to suspension or revocation for misconduct on part of licensee.

Prohibition of all persons from hiring a chauffeur who is not duly licensed or who does not display his license number while motoring.

Speed to be twenty and twelve miles as detailed above, but operation to be always governed by the conditions of traffic and the road, to be reasonable and safe.

Violations of the act to be punished by a fine of \$200 or less, for first offence, or by suspension of registration or license certificate; but any person convicted of operating or allowing another to operate a motor vehicle after a revocation or suspension of a certificate may be punished by a fine of \$200 or imprisonment for ten days, or by both.

Adequate bells and brakes or signal devices are required, as usual.

Registration fees are to pay the expense of clerical work under the bill, with the balance going to the State highway fund.

Park commissions, aldermen of cities, and selectmen of towns, are to



have the same rights as heretofore to make special regulations for automobiles both as to speed and as to the use of particular roads or ways, even excluding autos altogether, subject to approval of the highway commission; but all special regulations must be posted by towns adopting them at points where any road affected thereby joins any other road.

The existing law is repealed and new bill takes effect at once.

The only redeeming feature of the bill is that its requirement that towns should post their special regulations would tend to prevent some of them from making any restrictions of their own, although even this, in towns like Lenox and Lincoln where the feeling against the automobiles is very bitter, would have no deterrent effect. There is a likelihood, however, that with provisions like those here detailed, this new bill will fail of passage, in which case the old law will stand for another year.

#### LICENSING AND NUMBERING REGULATIONS FOR WASHINGTON.

*Special Correspondence.*

WASHINGTON, D. C., April 13.—The local police, acting on instructions of the District Commissioners, are waging a vigorous campaign against motorists who violate the speed regulations. The bicycle police squad has been increased and each member has had his wheel equipped with an improved speed indicator, and as a result many arrests have been made during the last few days. The police court judges have fined the most flagrant violators \$25, while others have escaped with fines of \$5. The largest fine that can be imposed under the law is \$40, and the judges have announced that hereafter motorists who speed their vehicles in excess of the legal limit will be fined the maximum amount.

So many operators have been in the courts of late that the District Commissioners are considering the advisability of promulgating a number of police regulations governing the operation of automobiles within the city limits. They recently had the board of steam engineers draft a series of automobile regulations based on those in use in New York City, and these will be supplemented by regulations suggested by the chief of police and the commissioners themselves. It is stated that special efforts will be made in framing the regulations to make them as equitable toward automobilists as possible, and still protect the public.

It is possible that every person who intends to operate a motor vehicle may be required to pass an examination before the Board of Steam Engineers of the District, for the purpose of convincing the authorities that he is competent to operate such a vehicle. Such an examination is now required of owners of steam vehicles. It is

probable that a system of numbering all vehicles will also be adopted.

Corresponding Secretary, E. M. Sunderland, of the National Capital Automobile Club, has just had an extended conference with the Commissioners, in the course of which he entered a vigorous protest against the "tagging" of the automobiles owned here, and declared that he would never submit to the indignity of having to paint a license number on the back of his motor vehicle. He further declared that if the Commissioners attempted to enact any such regulations the club of which he was an officer would fight the matter through the United States Supreme Court on constitutional grounds.

Commissioner West, who has immediate charge of these matters, is of the opinion that the position taken by the motorists is in poor taste, for under the present statutes the District authorities are authorized to make regulations governing the use of automobiles as well as the use of vehicles drawn by horses. He claims it would be no hardship for vehicles to be so marked that they could be identified, especially in view of the fact that this is required in various other parts of the country. While he does not as yet insist upon numerals painted upon the rear portion of the machine, Commissioner West is very likely to insist that some device be adopted for purposes of identification.

It is almost certain that some device, of which there shall be no two alike in the District, and which shall be carried upon the rear portion of all motor vehicles as a distinguishing mark, will be adopted. For instance, a star, a circle, a square, an anchor, and innumerable objects could be selected for such device, which would, of course, be registered with the police department.

Mr. Sunderland said the club, if necessary, would make its fight before Congress. It has already scored a victory in defeating certain legislation aimed at the rights of motorists and will leave no stone unturned to win again if the Commissioners seek to abridge the rights of automobilists.

Recently, a member of the club asked the Commissioners to appoint a dozen or more members of the organization as additional police privates to prevent fast driving by other motorists. The permission was not granted, as this would constitute a "roving police commission," which the Commissioners have consistently refused to grant, even in the case of the Humane Society agents who desired such privileges.

#### Damage Suit Withdrawn.

*Special Correspondence.*

NEW HAVEN, April 13.—The damage suit for \$2,000 against Joseph B. Sessions, a rich clock manufacturer, of Bristol, Conn., has been withdrawn from the

docket of the Superior Court, the plaintiff having concluded not to press it.

This case was brought by Sylvester P. Harrison, of Fall Mountain, against Mr. Sessions for \$2,000 damages for injuries alleged to have been received by the plaintiff's wife on account of her horse having been frightened by the defendant's automobile. At the time of the accident, Mrs. Harrison was in her carriage on Laurel Street, when Mr. Sessions went into the street with his steam carriage. When Mr. Sessions saw that the horse was frightened, he stopped a long distance from the carriage. Finally, in trying to turn the horse around the carriage was upset and Mrs. Harrison was thrown out. She undoubtedly, as she has claimed, has suffered a great deal from the shock resulting from the accident, and, about two months ago, began the suit.

It is supposed that the fact that there was nothing for the suit to stand on led to its withdrawal.

#### EVANSTON'S MAYOR A CHICAGO LAW BREAKER.

*Special Correspondence.*

CHICAGO, April 11.—As Chicago motorists have reason to remember, Mayor James A. Patton, of Evanston, Ill., made a western record last fall in the number of arrests for violation of the speed ordinances of that suburb. That Mayor Patton himself was not arrested in Chicago the other day for exceeding the speed limitations of this city was due a good deal more to luck than to all intents and purposes on the part of John Farson of the New York-Chicago banking house of Farson, Leach & Co.

Mr. Farson had invited Mr. Patton out to luncheon at his home in Oak Park, nine miles away. The smooth stretches of Jackson Boulevard to the west were on the route, and when the car struck the asphalt on the other side of the river, Mr. Farson poked a finger into the ribs of his chauffeur, indicating a spurt at top speed.

The machine responded to the signal in a manner to leave nothing more desired, save a boulevard policeman with uplifted stick. And that was the one figure which for miles the eye of the banker sought in vain.

Mayor Patton in the first block was frightened; half a mile away he was panic stricken, and at Ashland Avenue he was figuratively on his knees in supplication to Mr. Farson to slow down to the exactions of the ordinances. Mr. Farson was obdurate.

"Really, you won't know how it feels until you are pinched," the banker insisted, looking to right and left and up and down for the policeman that would not appear, Mayor Patton at every block growing more and more distressed.

But luck was with the mayor, and after the boundary line of Oak Park was

crossed, the same dearth of police officers held to the very doors of the Farson home. Here, with appetite considerably impaired, the mayor stepped to the curbstone with a heavy sigh.

"Farson," he said, "if I had been arrested on that run, I wouldn't have dared to go back to Evanston to get my things packed for moving out of the place."

"Yes, I had thought of that," said the banker, reflectively, "but you know you could have hired them packed!"

Mayor Patton returned to Chicago on the train.

### Motorist Assessed for Damages.

*Special Correspondence.*

NEW LONDON, April 13.—Judge G. W. Wheeler, of the Superior Court, sitting at Bridgeport, recently rendered a decision in the case of John H. Keenan against William S. Brandegee, allowing \$800 and costs for injuries received in a collision. On April 25, 1902, Mr. Brandegee's automobile ran into Mr. Keenan, who was riding a bicycle, and the latter was thrown and one knee severely injured. He brought suit to recover \$5,000 damages, the complaint asking that treble damages be assessed under the statute providing for the same. The automobile, it was proved, was on the wrong side of the street at the time of the accident. Judge Wheeler, in his memorandum, said that treble damages could not be assessed against the defendant because the statute at that time did not relate to motor vehicles.

### RULES OF THE ROAD FOR GREATER NEW YORK.

A revised ordinance embodying rules of the road to be observed in Greater New York, with sections applying specifically to motor vehicles, has been introduced in the council by Alderman Joseph Oatman. Following are the automobile provisions:

**Signal for Automobile**—Every person driving an automobile or motor vehicle shall, at the request or signal by putting up the hand, from a person driving or riding a restive horse or horses, or driving domestic animals, cause the automobile to immediately stop, and to remain stationary as long as may be necessary to allow said horses or domestic animals to pass.

The following rates of speed through the streets of the city shall not be exceeded, that is: Eight miles an hour by bicycle, tricycles, velocipedes and motor vehicles, however propelled, or by passenger and other vehicles drawn by horses or other animals, except that in portions of the city not built up, where the buildings are at least one hundred feet apart, a speed of fifteen miles an hour may be maintained.

No vehicle shall cross any street or avenue running north and south, or make any turn at a speed rate exceeding one-half its legal speed limit.

Every automobile shall exhibit during the same period two lamps showing white lights visible at a distance of three hundred feet in the direction toward which the automobile is proceeding, and shall also exhibit a red light, visible in the reverse direction. The lamps shall be so placed as to be free from obstruction to light from other parts of said automobile.

Any person violating any provision or regulation hereof shall be deemed guilty of a misdemeanor, and upon conviction thereof by any magistrate, either upon confession of the party or by competent testimony, may be fined for such offense any sum not less than \$1 and not exceeding \$10, and in default of payment of such fine may be committed to prison by such magistrate until the same be paid; but such imprisonment shall not exceed ten days.

A provision of the ordinance that will please automobilists is that which allows of a speed of fifteen miles an hour in sections of the city that are not thickly built up. Under the State law the speed anywhere within the limits of a city could not exceed eight miles an hour, which was considered a hardship owing to the fact that in the extensive area covered by Greater New York are many roads in sections not built up where a limit of eight miles an hour is absurd, fifteen miles being perfectly safe.

### Sign-Posts at New York Cross Roads

A bill introduced in the New York Legislature by Assemblyman John F. McCullough, of Manhattan Borough, is in the form of an amendment to the highway improvement law of 1898 and provides that "All highway commissioners in the several counties of the State with the exception of Wyoming County, shall within thirty days after this law shall take effect, cause to be erected sign posts at every cross road where there is an intersecting post road forming an angle of more than 36 1-2 degrees by good surveyor's measure. Said sign posts shall set forth in letters of not less than six inches in height the distance to the nearest hotel at which man and beast can be accommodated."

This act will take effect July 12, 1903, if it is passed and signed. The bill has been read once and referred to the Committee on Internal Affairs.

### Livery Company's Broad Privileges.

The Connecticut Legislature is having a great deal of ridicule and criticism directed at it because of the broad charters which the Secretary of State is issuing giving extraordinary privileges to corporations. A recent example is that of the Automobile Livery Co., which is authorized by its charter to "purchase, lease or otherwise acquire any mines, mining rights and land and any interest therein,

and may explore, work, exercise, develop and turn to account the same, and to buy and sell bridges and make bridges." It is also authorized to "hold, purchase and dispose of the whole or any part of the capital stock and bonds issued by any other corporation." The connection between automobile livery and these remarkable privileges is not made clear.

### Opposed to Motor Buses in Nantucket.

Decided opposition to the use of automobiles on the island of Nantucket was shown at a recent meeting of the citizens of that town. The occasion was a hearing on the petition of Lunde & Macy, of New York city, to run automobile omnibuses over the State highway from Nantucket to Siasconset on the eastern end of the island. Many remonstrants appeared, whose chief argument was that automobiles would be dangerous when the summer season brought the usual large number of visitors with spirited horses. An expression of the opinion of the citizens showed almost unanimous objection to granting the petition and the selectmen have accordingly given the company an adverse decision.

The Senate of the New Jersey Legislature has passed a bill providing for the improvement of the Newark Plank Road under the State aid law. This road is one of the two that connects Newark with Jersey City across the Hackensack Meadows and forms one of the most used connecting links between the whole State of New Jersey and the metropolitan district embracing Jersey City, New York and Brooklyn.

Worcester automobile dealers have been notified by the License Board of that city that hereafter they will not be allowed to keep gasoline, either in large or small quantities, upon their premises. The dealers have been keeping a supply on hand for automobilists needing the fuel in tanks at the rear of their stations. They must now find some other way of keeping the fluid in an accessible location.

The precedence heretofore given to automobiles on the Thirty-fourth street ferry to Long Island City has been stopped by order of Captain Cooney, of the Seventy-fifth Police Precinct, of Manhattan Borough. Automobilists have been in the habit of shooting ahead of the long lines of carriages and trucks which forms, especially late in the afternoon, but now they will have to take their turn.

Police authorities in Marshfield, Mass., have taken elaborate steps to secure the arrest of automobilists who disregard the speed laws on the local highways. Special officers have been appointed to man stations some distance apart on the principal roads and connected by telephone, so that if when a fast driver passes one officer the next one can be advised by telephone to hold him up.



## CLUBLAND

### PROPOSED BOSTON CLUB CONTESTS IN ABEYANCE.

*Special Correspondence.*

BOSTON, April 13.—Both the hill-climbing contest and the proposed race meeting which have been planned by the Massachusetts Automobile Club for April 20 and May 30, respectively, are held up at present by conditions outside the control of the club. The hill-climbing contest, for which the Commonwealth avenue boulevard near Chestnut Hill Reservoir was to be used, cannot be put through unless the Legislature's committee reports favorably on the automobile bills which it has had on its docket for some time. One of these, known as the Stanley bill, cuts the speed limit to eight and twelve miles per hour, and if passed would shut off the contest because, even in hill climbing, the speed required to make the event worth while would be between twelve and fifteen miles per hour. So the club committee is waiting to see what the Legislature will do about the speed clauses.

As for the race meeting, the place, if anywhere, will be the Readville track, for which the Boston Automobile Dealers' Association secured an option for May 30. Some time ago the dealers held a meeting and agreed to turn this option over to the club on condition that the club would raise the funds necessary to guarantee the meet. This means that the club will have to pledge between \$4,000 and \$5,000 as a guarantee fund, and the track managers require a forfeit of 40 per cent. of the gate receipts to insure the holding of the meet. So the club has been considering the question of raising the necessary funds.

Some of the members are inclined to think that so many of the big racers will be in demand for the events on the other side of the Atlantic at about the time of the proposed Readville meeting that it would be difficult to secure any star attractions for the Massachusetts Club's races. But the racing committee believes that there will be no lack of attractions.

### Organizing the Park Club.

*Special Correspondence.*

BUFFALO, April 13.—About thirty members of the Buffalo, Saturn, Country and Ellicott Clubs, of this city, have got together for the formation of a new club, to be composed of men who are interested in automobiling, driving, tennis and other outdoor sports. Meetings have been held and a committee appointed to look after the arrangements of details. At the last meeting a number of names for the club were submitted and a vote resulted in a tie between "Park Club" and "Scajaquada Club." The Indian name seemed to be

most favored, as it is thought it would attract greater attention.

The membership of the club will be limited to 200. From the eleven persons comprising the board of directors, a president, vice-president, secretary and treasurer are to be elected. The foregoing officers, with three other members, will constitute a house and grounds committee.

The following were elected directors: J. M. Satterfield, Bert J. Jones, Charles R. Huntley, H. A. Meldrum, Lee H. Smith, Bronson Rumsey, F. S. McGraw, George S. Metcalfe, W. H. Hotchkiss, George Bleistein and Whitney A. Case. Mr. Satterfield was elected secretary. The other officers will be elected and a final decision on the name will be made at a meeting to be held later.

### Hudson County Club Election.

These officers and committees have been elected for the ensuing year by the Hudson County Automobile Club, of Jersey City, N. J.: President, A. G. Evans; vice-president, Dr. L. A. Opdyke; secretary and treasurer, Frank Eveland; Board of Governors, G. E. Blakeslee, E. B. Kiersted, Dr. G. Wilkerson, G. Wilson. Runs and Tours Committee, G. E. Blakeslee, D. W. Romaine, G. E. Wilson. Good Roads Committee, G. L. Record, W. C. Fisk, E. B. Kiersted. House Committee, J. H. Edwards, C. Fisk, F. Englebrecht. Auditing Committee, E. Yale, G. E. Long, J. S. Dear. Membership Committee, E. B. Kiersted, G. E. Wilson, Dr. G. Wilkerson.

Headquarters have been secured for the club at the Crescent Automobile Company's garage, at 2565 Boulevard, Jersey City, a room having been reserved for the club in the new building. In response to letters from President A. R. Shattuck, of the Automobile Club of America, relative to fast driving on the Hudson County Boulevard, notice has been sent to the club members asking that they refrain from indulging in the practice.

### Cleveland Club's Useful Book.

The Cleveland Automobile Club has issued a booklet containing information of value to all automobile users in the city. One of its features is a copy of the city ordinance regulating the use of automobiles which was framed and indorsed by the club. The majority of the members desire to see this ordinance obeyed, but there are a few who have been very reckless in regard to it and may thereby forfeit their membership unless they desist. The book also contains the names of the five hundred users of motor vehicles in Cleveland—the number at the time the book was compiled—arranged numerically according to their numbers at the City Hall, and in another list arranged by names of owners in alphabetical order. After each owner's name is given the make and style of machine. This shows

that of the total of 500 machines 261 are gasoline, 145 steam and 94 electric vehicles. A list of the club members is also given.

### Annual Florida Tournaments.

It is proposed by the members of the executive committee of the Florida East Coast Automobile Association, which was organized at Ormond, on March 28, to absorb the Daytona and Sea Breeze Automobile Association, to promote an annual automobile tournament week with alternate days of racing and record trials, at a time during the winter when the tournament will not interfere with the national shows.

Among the eighteen members of the executive committee are Alexander Winton, Cleveland; R. E. Olds, Detroit; W. H. Peters, New York and Daytona; J. F. Hathaway, West Somerville, Mass., and Ormond; W. J. Morgan, New York; Charles B. Ryan, Portsmouth, Va.; and Dr. H. H. Seelye and several prominent members of the Ormond Association. W. J. Morgan was appointed to interest and secure European competitors.

### New Club Formed in Auburn.

The Automobile Club of Auburn (N. Y.) was organized on April 2, when the enthusiasts of Auburn held a banquet at the Osborn House. The club starts with a membership of thirteen and with prospects of a rapid increase. The following officers were chosen: President, W. F. Wait; vice-president, S. C. Tallman; secretary and treasurer, Dr. G. W. Whitney. Other members of the organization are W. B. Barnes, Dr. R. B. Avery, George S. Barrett, Charles S. Sharp, Lester D. Swart, Dr. L. P. Meaker, Emory Caldwell, H. L. Stevens, J. B. Tallman and Dr. William H. Coe. The following members of the Syracuse Club assisted in the formation of the Auburn Club: President H. W. Smith, C. Arthur Benjamin, George S. Larrabee, W. L. Brown, W. A. Fancher and John Maxwell of Onedia.

### A. C. A. Membership.

These new members were elected at a meeting of the Board of Governors of the Automobile Club of America Monday evening, April 13: Active—Herman B. Duryea, H. M. Crane, Frank C. Armstrong, F. Gebhard, H. Clay Pierce, Howland Pell Haggerty, Temple Bowdoin, Frank A. Munsey, Albert Lemaitre, R. L. Beeckman, Willard Bruce Mack, the Duke of Manchester. Associate—John S. Cox, John H. Lindsay, William Thaw, Kirk LaSelle, A. W. Comstock. It was decided to appoint a committee to meet similar committees from the National Association of Automobile Manufacturers and the American Automobile Association to consider the chauffeur and automobile mechanic question.

## Cleveland Dealers Adopt New Methods.

*Special Correspondence.*

CLEVELAND, April 11.—A new plan for displaying their goods has been adopted by Cleveland dealers, the location of whose stores makes it possible for them to employ it where persons in other branches of business cannot. One may see at almost any hour on a bright day, a number of new automobiles standing on the broad pavement in front of their stores and might, at first, suppose that the machines were there only temporarily waiting to be taken into the store, but after seeing them there day after day during good weather, the conclusion must be drawn that they are there for display purposes.

This method of display is believed to be new and peculiar to Cleveland, where the streets and walks are broad. That it pays there is no doubt, for many persons stop to examine the machines who might not go into the stores hoping to find something to interest them. While immediate sales may not result in large number from this system, the foundation is being laid for future business. One of the machines is generally kept ready for demonstration purposes.

The increasing number of city automobile licenses being issued indicates that a goodly number of machines are being delivered now. The number, 500 at the first of the year, is 540, and has been growing at the rate of one per day. A visit to the stores shows that the new machines are beginning to be received and that they will from now on be able to make deliveries to their customers. The next few months will be a busy period with them. Most of them have secured commodious quarters where they will not only be able to set the machines up, but will also conduct complete repair shops and carry a line of supplies and parts.

### NEW REPAIR STATIONS.

The Ohio Motor Car Co. has fitted up large repair and storage departments in the basement of its store on Prospect Street, and a large elevator connects the two floors. Already it is doing a fair storage and repair business. A complete switchboard for charging electric machines has also been installed. A full supply of parts and supplies will be carried. The company has the State agency for the Northern runabout, and A. W. Hall, formerly of Detroit, will represent the company on the road.

The new Cleveland branch of the Diamond Rubber Co., at 323 Huron Street, under the management of F. E. Taylor, is one of the best equipped stores in the city. The room is finished in terra cotta has splendid light from both front and rear and furnishings modern in every respect and suited for their purpose. In the basement is a complete repair shop, with

vulcanizer heated by steam from a boiler installed for that purpose. An air compressor, operated by an electric motor, is also located in the basement and there is about fifty feet of hose on the pavement in front of the store, so that tires may be filled without running the machine inside.

### A PLETHORA OF ORDERS.

Some of the Cleveland concerns are having difficulty in getting enough machines to fill orders and must depend upon outside factories for vehicles. The Cleveland Automobile and Supply Co. placed an order for what it supposed would be enough Cadillacs, but already these are sold and a second order for two-thirds as many more has been turned down because the factory has all the orders it can fill. The result is that the Cleveland house must supply its customers with some other make which it can get, or must do without until next season.

Manager R. Owen, of the Oldsmobile Co., has received several letters from persons who claim they left orders for machines with him at the Cleveland show. He finds no record of such orders and has come to the conclusion that the writers are either mistaken or that he was so worn out with work on the closing Saturday night that he failed to record the sales. He was in bed a week after the show and his records showed more than 125 machines sold. If the factory is able to turn out the extra machines the orders will be filled.

### HUGE AUTOMOBILE DELIVERY SYSTEM FOR WANAMAKERS.

*Special Correspondence.*

PHILADELPHIA, April 13.—Automobiles only are to be used in the delivery department of the huge twelve-story granite retail establishment which is to be erected opposite the City Hall for John Wanamaker, replacing the entire block of ramshackle structures now occupying that site. Plans for the new establishment call for the most extensive and up-to-date delivery system in the United States, if not in the world. Permits for the construction work, which is to be finished in three years, have already been granted. The building is to be erected in four sections, to be completed successively so as not to interrupt the trade of the store. The delivery department will be located along almost the entire Thirteenth street side, and so arranged that no blocking of the sidewalks by wagons receiving or delivering goods will occur, as at present. This change will allow the main front of the structure to face the City Hall, where the present delivery department is now. The first floor on the Thirteenth street side will be "arcaded" sufficiently to allow for a sidewalk of the regulation

width, inside which, alternating with entrances to the main floor, will be twelve or fifteen wagon elevators of a size sufficient to accommodate the largest automobile truck. These elevators will be used for lowering and raising the automobile delivery wagons and trucks, empty and loaded, to and from the sub-basement, which will be devoted exclusively to the delivery department.

Articles purchased in any of the departments of the huge building will be wrapped, addressed and at once sent to the delivery department in the sub-basement, where they will be immediately sorted into bins by a special corps of men and boys and loaded without delay into the wagon or wagons assigned to the respective delivery districts. It is planned that the wagon assigned to a certain district shall always use the elevator nearest the bin containing the goods destined for that district.

Manager Bunting, of the Wanamaker automobile department, claims that under the new system one-half the present number of vehicles will perform the hauling and delivery work and that delays will be much less numerous than at present, besides which the expense, by reason of the fewer men and the elimination of horses, will be considerably lessened.

### New Company Forming in Syracuse.

*Special Correspondence.*

SYRACUSE, April 13.—The Syracuse Automobile & Motor Co. will be incorporated within a week with a capital of \$100,000. The majority of the stock has been subscribed. The concern will occupy the old Olive bicycle plant, and negotiations for the purchase of this property are going on now. Several out-of-town men, as well as Syracuse capitalists, are interested in the project. The promoter and superintendent of the company is George DeLong. The company will make the DeLong motor cycle in addition to automobiles, automobile parts, gears, transmissions and bodies. The complete vehicle will be a runabout on the French pattern, with maximum speed of 30 miles an hour. The motor will be a six-brake horse power. The new car will be finished in dark green with black trimmings and considerable brass, and will be equipped with a dos-a-dos seat. The wheels will be wood and the machine will be lever or wheel steering to suit the purchaser.

The DeLong motor cycle patents have been owned by the Industrial Machine Co. The feature of this machine is that the frame of the machine is made to serve for tanks. This machine will be equipped with a 2 1-2 horse power motor. Mr. DeLong was formerly superintendent of the J. S. Leggett Mfg. Co.

Grout Bros., the Orange (Mass.) automobile manufacturers, have finished a big touring car expressly for their father.



## PROTEST AGAINST A NEW GARAGE WITHOUT AVAIL.

*Special Correspondence.*

WASHINGTON, D. C., April 13.—An interesting controversy was temporarily settled recently when the District Commissioners granted the application made to the building inspector by a property owner for the erection of a brick building for the storage of automobiles in the fashionable residence section of Washington. A permit was issued some time ago for the erection of an automobile livery and storage warehouse for the Automobile Storage & Repair Co. As soon as the purpose of the new building was known to the residents of the locality a big petition protesting against it was forwarded to the authorities, whereupon an amendment to the police regulations was made providing that no automobile livery stable or building wherein automobiles are kept for hire should be erected or maintained in a residence street without the written consent of 75 per cent. of the resident householders and real estate owners on the side of the square on which such stable was to be located, and 75 per cent. of the residents and owners of real estate on the confronting side of the opposite square.

When a second permit was asked for, the attorney for the owner of the property set forth the claim that the proposed building did not come under the above regulation, for the reason that it was to be used purely as a mercantile establishment for the sale and storage of automobiles, and although persons purchasing machines from the company occupying the building might keep the machines there by the payment of monthly rent, such machines would not be for hire. Upon this view of the case the District Commissioners submitted the question to the corporation counsel, who decided that the Commissioners would not be authorized to withhold the desired permit. The permit was accordingly issued, and the protesting residents were informed that their only remedy is an action in the courts in case the storage warehouse proves to be a nuisance by the noise of the machines or their coming and going at late hours of the night.

## Horsemen and Motorists Combine.

*Special Correspondence.*

CLEVELAND, April 13.—The members of the newly organized Cleveland Road Drivers' Association are endeavoring to form a unity of interests between that association and the Cleveland Automobile Club, to the end that several plans which both have in common may be carried through with a greater degree of success. One of these is the securing of a speedway in one of the city parks. It would seem that the plan is to have certain days set apart for horse drivers and the other days for automobilists. Another purpose is to further the good roads movement

and there are mutual interests in this also. A third purpose is to secure the enforcement of the ordinances relating to the speed of street cars, automobiles and horse vehicles. Several members of the automobile club have already become members of the driving association, and others will in all probability join hands with it.

## CAPACIOUS NEW GARAGE OPENED IN CLEVELAND.

*Special Correspondence.*

CLEVELAND, April 11.—Without much eclat the Cleveland Automobile & Supply Co. opened its new garage on Vincent Street and began doing business, or rather continued with a break in the business after moving from the small quarters on Prospect Street.

The building is two stories high, with a large basement, and the floor area is immense. On entering the building, the office is to the right. It is finished in hard pine, and glass partitions furnish soft light for the bookkeepers and stenographer. Passing on one enters a very large apartment, which is to be used for housing customers' vehicles. It is furnished with charging apparatus, so that a number of electric machines may be charged at the same time. It is well lighted with electric lamps and has a row of windows extending the entire length of one side. In the rear of this is the workshop, in which machines fully completed might be turned out. In the basement directly beneath this will be located an electric plant, which will not only furnish light for the building and power for the machinery, but will also be used to charge electric vehicles. It will be operated by a large natural gas engine, and will be complete in every detail.

On the east side of the building on this floor is the display and salesroom. It is nicely finished and connects with the office in front. To the rear of this is the wash floor, and still further back a comfortable little room for the night men.

The second floor is divided into a reception and waiting room and a repository. The waiting room is in front and is reached by a stairway from the office. It is handsomely finished and will be furnished with comfortable chairs and easy lounging seats. The daily papers, automobile journals and popular magazines will be found upon the tables, so that this will equal in many respects a club room. It will be used by both ladies and gentlemen when waiting for the machines to be gotten ready for them. The rear portion of this floor will be used for a repository, while in the extreme rear is the lead burning room. An electric elevator, large enough to carry four vehicles at once, connects the basement and the ground and second floors.

In this city automobiles are finding their way in front of the churches on Sunday

morning, about the opera houses of a week-day evening, in the parks in the afternoon and on the streets every day whether it is raining, snowing or blowing a gale. There are about 550 of them in use here now, and the day when one cannot stand in one spot almost any place in the city and count three or four is a dull one indeed. In addition to all these uses a brewery delivery wagon and an ambulance are in constant service, and are proving successful for their purposes.

## Steel Process Plant.

*Special Correspondence.*

SYRACUSE, April 13. — A big New York syndicate consisting of Lewis A. Leonard, Charles M. Palmer, and Clark & Son, has taken hold of the Hyle Bros.' steel works, of this city, and has formed a company with \$1,000,000 capital, to build a new plant. It is said that Syracusans will still retain the controlling stock. The Hyle Bros. are owners of a new process for converting soft iron into steel. Articles are first shaped from malleable iron at little expense and then converted into steel by the process, which is the discovery of William A. Hyle. The factory at the corner of Tully and West streets was run experimentally up to six months ago, when orders came in so fast that they could not be filled. Among other things automobile castings are made.

John Maxwell, manager of the National Casket Company, at Oneida, has been appointed State agent for the Haynes-Apperson Automobile Company, of Kokomo, Ind. He assumed his duties April 1.

Attleboro, Mass., is to have another automobile company, formed from the Webster and United States Automobile companies, which were both located there, but have gone out of business. The patents, tools and stock of the two concerns have been bought by the promoters of the new company, whose name, capital and plans will soon be announced.

At the annual meeting of the stockholders of the New York Transportation Co., which operates an electric cab service in New York city, held in Jersey City on April 6, George H. Day and Philip T. Dodge were elected directors to take the places of T. E. Hayes and H. L. Zabriskie. Mr. Day is the president and Mr. Dodge a director of the Electric Vehicle Co. of Hartford.

Delivery cars are soon to be built on a large scale by the Fournier-Searchmont Automobile Co. of Philadelphia. The company's designers are now at work along this line and it is expected that the new cars will be ready for the market next fall, although it will be some months before the plans and prices are made public. This company has had a Panhard delivery car in use for more than a year, and now has two in actual service, with which all its hauling is done.

## Correspondence.

(Continued from page 439.)

the committee's word for it that the course is safe at any speed. I would like very much to have the expressions of other drivers on this vital question.

L. H.

New York.

### Condenser for Spark Coil.

Editor THE AUTOMOBILE:

Sir:—In your issue of March 14 Mr. George T. Hanchett describes the construction of a jump spark coil. The details are very lucid until the condenser is reached; there the number of pieces of tinfoil is not mentioned, which might possibly have something to do with the action. Will you please give the proper number?

I should like to know how to figure the proper size of condenser for any size of coil giving not more than a 2-inch spark.

If the secondary coil were No. 30 wire, would that size make an efficient coil?

W. B. K.

Cleveland, O.

These queries were referred to Mr. Hanchett, who replies as follows:

1. Simply fill the space allotted for the condenser as full as it will hold.

2. The condenser surface required will depend not only on the volume of current in the primary coil, but on the quickness of the break as well. There is therefore no practicable way of calculating this surface, and it is best determined by study of successful coils and by experiment.

3. No, because it would be impossible to get a sufficient number of turns of the thicker wire into the available space.—ED.

### Speeds and Gearing.

Editor THE AUTOMOBILE:

Sir:—Is there a man owning a light gasoline runabout, with the ordinary planetary transmission gear, who has not at times wished for just a little more power and a little less speed? These machines generally have a 5 horse power engine, which running at full speed gives about 20 miles an hour on the road. On the high speed this is all right when the roads are good and smooth, but on rough and poor roads you want less speed and more propelling power. Of course, a good engine can be throttled and run slow, but a slow running engine gives little power. True, the hill climbing gear can be used, but its use is far from satisfactory on a long stretch of poor road. It is too slow, there is much loss of power from friction, and besides there is a continual grind, and the gear wears rapidly.

To remedy all this I propose to put an extra planetary gear on the rear axle in combination with the compensating gear. I would arrange it to reduce speed about 25 per cent. This on the machine I have—

with the ordinary two speeds forward and reverse—would give four speeds forward, viz., 20, 15, 10 and 7 1-2 miles, with engine running full speed, and with throttling would give any speed from three miles up, and two speeds reverse. The gear can be made large and strong and as it runs at a very slow speed there would be but little friction and practically no noise. When in use it would reduce the strain on the chain 25 per cent. also, considering the power exerted by the drive wheels.

Has anyone tried this plan for doubling the speeds?

JAMES SLACK.

New Knoxville, Ohio.

So far as we know, no one has used this arrangement. There are several objections to it, one of which is that a planetary gear on the rear axle, on account of the slow speed at which it would run, would have to be very large and heavy to transmit the power. This would result in an awkward construction in the axle itself and would add seriously to the dead load on the tires. It would probably be impracticable to use the internal gear type for so small a reduction as 25 per cent., unless the internal gear were very large. We believe that the slow speed in most planetary gears is nearer a quarter than a half the high speed, which would render the proposed slowest speed of very little use.

If the interior arrangements of our correspondent's machine permitted, a much more efficient plan would be to put the sprocket pinion on a countershaft driven by a pair of sliding spur gears from the planetary gear, and then to shift the exhaust cam so as to run his engine backward; but it must be admitted that most runabouts with planetary gears do not lend themselves with any degree of facility to changes of this kind.—ED.

### Correction.

A conspiracy of types and proofreader was responsible, in the issue of April 4, for our making the stroke of G. H. W.'s two-cylinder marine engine 4 inches (bore being 9 1-2 inches), instead of 9 inches as given by our correspondent. With the stroke amended, the estimated power of the engine—25 to 28 horse power, at 300 r. p. m.—should be correct.

Eugene Sandow, the strong man, is one of the latest devotees of the automobile, having secured a big Searchmont touring car, which he takes delight in operating almost daily.

Robert Coleman H. Brock, a wealthy Philadelphia motorist, is planning a trip to California in his touring car. His family and a party of friends will travel in a private railroad car and wait for him at appointed places of interest along the course he will take.

## Motoring in Switzerland.

Writing about the prospects of selling American automobiles in Switzerland, Consul H. L. Washington, at Geneva, states that the price of benzine (gasoline) is only \$4.63 per 26.42 gallons, or about 17 1-2 cents per gallon, in that city. In regard to regulations for tourists the consul says:

"The right to travel in automobiles through the country is another pending question in regard to which I receive numerous inquiries from persons planning tours. It will be definitely settled in the near future. The Swiss Touring Club and the Automobile Club, both of Geneva, have long been advocating a general meeting of delegates from the different Cantons, with a view to securing uniformity in the regulation for cycles and automobiles. The meeting finally took place in Berne Dec. 19, 1902, and the bill now before the authorities will supersede the different cantonal regulations which now perplex and hinder the tourist.

"Following is an abstract of the bill:

"Each proprietor of an automobile must possess a cantonal card of identity, which shall contain his photograph. The capacity of the machine and the aptitude of the driver will be carefully examined into prior to issuing the card. Each machine must have two cantonal number plates, one in front and one in the rear. The alarm signal must be a low-toned horn. Two independent brakes will be required; also a green lantern on the links, a white one on the right side, and a red one in the rear. A maximum speed of 30 kilometers (18 4-5 miles) will be permitted, but in towns, villages and on mountain roads this speed is reduced to 10 kilometers (6 1-5 miles) per hour, and on bridges, sharp angles and steep roads and in narrow passageways to 6 kilometers (3 3-4 miles).

"Foreign tourists will be exempted from taxation and cantonal number plates, provided they are bearers of a permit from the authorities of their own country, and that reciprocity with that country exists.

"It was hoped that all Cantons would accept the bill, but the Canton of Grisons, which is the most mountainous and in which automobiles are strictly forbidden, proves reluctant. It is also feared that the Canton of Valais will continue to restrict motor cars to the one road through the Rhone Valley to Brigue."

Only two manufacturers have announced that they will compete for the Arenberg cup in the Paris-Madrid race, which is now held by Chevalier René de Knyff and goes to the fastest vehicle driven with alcohol as fuel in a hydrocarbon motor. The two firms are Gobron-Brillié and Brouhot et Cie.

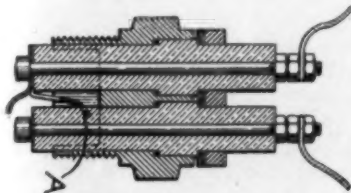


## Patents

### Spark Plug.

No. 724,945—William Roche, of Jersey City, N. J.

A plug comprising a metal body, two electrodes separately insulated in porcelain tubes, and a sparking point attached



ROCHE SPARK PLUG.

to one electrode and approaching the other. Integral with the sparking point is a "lip" *A*, which reaches back to a point approaching the metal body, the intention being that, if a "ground" forms between either electrode and the body, the current will tend to get back into its proper incut by way of the "lip," the distance from this to the body being less than that of either electrode to the body. The inner end of the body has a chamber recessed in it as shown, into which the burnt gases may be compressed, to bring fresh mixture about the sparking point.

### Steam Motor.

No. 724,380—C. S. Cole and W. J. Baulieu, of Bridgeport, Conn.

A steam motor on the general lines indicated in the cut. The crank shaft is hollow, and the crank pin and ends of the connecting rods are formed with ports, steam is admitted by way of the crank shaft and exhausts into the crank casing direct from the piston by the piston ports shown.

No. 724,379—C. S. Cole and W. J. Baulieu.

A modification of the engine described



COLE & BAULIEU MOTOR.

in No. 724,380, in which reversal may be effected by rotating the pistons around their own axes through 180 degrees, bring-

ing the piston ports into action with a new set of ports in the connecting rod ends.

No. 724,261—C. S. Cole and W. J. Baulieu.

A modification of the engine described in No. 724,379, by which reversal is effected by rotating disk valves in the pistons instead of the pistons themselves.

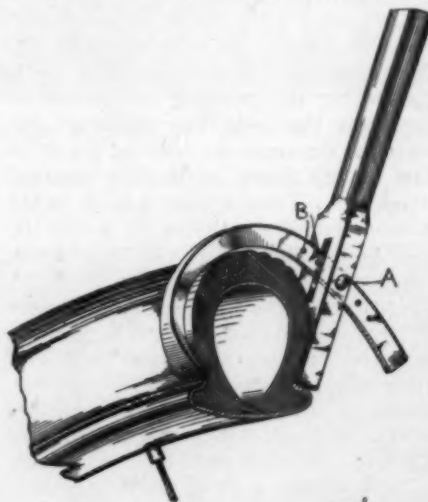
No. 724,262—C. S. Cole, of Bridgeport, Conn.

A modification of the engine described in No. 724,261, wherein the disk valves are employed to cut off the steam supply when desired.

### Tire Detacher.

No. 724,157—A. W. Blanchard, of New York, N. Y.

A gripping apparatus of the form shown in the cut. It may be adapted to tires of



BLANCHARD TIRE DETACHER.

different sizes by fitting pin *A* into any of the holes *B B*.

### Pneumatic Tire.

No. 723,945—P. W. Tillinghast, of Cranston, R. I.

A tire having its whole inflated portion above the rim, and the outer cover or shoe formed as shown, so as to be readily detachable. The beads *A A*, vulcanized into the base of the shoe, are substantially incompressible, being built up of canvas filled with rubber. When the tire is inflated they are held in place by the shape of the grooves in the rim and by the corrugated band *B*. When the tire is deflated the shoe may be removed by turning one of the beads around the edge of the band as around a pivot, as the second cut shows.

### Mixing Valve.

No. 724,328—M. Pivert, of New Orleans, La.

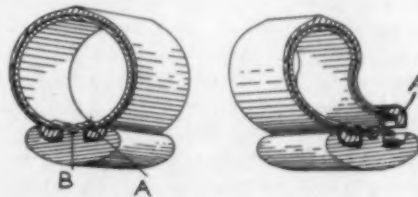
In the cut, *A* is the inlet valve of the engine cylinder. Gasoline enters at *B* and air at *C*, taking up the gasoline as it draws over the adjustable cone *D*. A needle valve *E* is provided to regulate the flow of gasoline;

but as it would be impracticable to make cone *D*, acting as a valve, come fully to its seat between strokes, it must be inferred that the device is best suited to engines of constant speed.

### Manufacturing Storage Battery Plates.

No. 724,387—William Gardiner, of Chicago.

A process designed as a substitute for



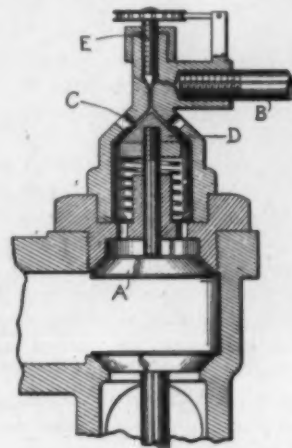
TILLINGHAST PNEUMATIC TIRE.

the ordinary pickling process for Planté plates. It consists in subjecting the plates, first as positives, then as negatives, and finally as positives again, to electric currents of suitable strength, in baths consisting, in order, of (1) a 10-per-cent. solution of sulphuric acid, with 5 ozs. sulphate of aluminum, 5 ozs. nitrate of ammonia, and 1 oz. oxalic acid per gallon; (2) sulphuric acid solution as above, plus 3 ozs. tartaric acid and 5 ozs. sulphate of magnesia per gallon; (3) 15 ozs. sulphide of soda and 8 ozs. sulphide of ammonia per gallon of water. It is claimed that this process is much quicker than pickling and produces more durable plates.

### Reversing Gear.

No. 724,557—G. P. Dorris, of St. Louis, Mo.

A reversing device for sliding speed gears, consisting of a large internal gear on the rear end of the driven shaft, and a sleeve, splined on the first shaft and carrying a pinion. This pinion will mesh with the internal gear when the sleeve is shifted out far enough, but is normally held in an idle position by a spring. The



PIVERT MIXING VALVE.

sleeve is pushed into its active position by the gear carriage when the latter has passed the first speed position.

## Motor News from Many Points.

Lower Merion township, Montgomery County, Pa., is noted for having the best system of roads in the Keystone State. This township adjoins Philadelphia County, and Quaker automobilists are wont to "burn up" its good roads, to the worry of the township people and the wrath of the Commissioners. As a consequence harsh measures have been taken to curb the "scorchers," which measures have resulted in an appreciable fattening of the township treasury on such culprits as could be apprehended.

It is the custom of the Merion Commissioners to make an annual tour of inspection of the roads. On a recent Saturday afternoon, through the courtesy of the Autocar Company, of Ardmore, they were enabled to perform their task in an up-to-date manner. Four automobiles were provided, and, with Commissioner John S. Clarke in the lead, he and his colleagues bowled over about sixty miles of the township's roads in a little less than two and a half hours. Notwithstanding the fact that a little figuring demonstrated that the speed ordinance was continually fractured during the jaunt nobody was arrested, and after it was all over and the Commissioners were dispatching dinner as the guests of Senator A. B. Roberts, at the handsome club house of the Merion Cricket Club, not one of them was heard to complain of the speed, although the dust came in for some unfavorable comment. This, it was pointed out, was the fault of the roads, and the "fathers" wisely kept quiet thereafter.

### Air-Cooled Mitchell Tonneau Car.

*Special Correspondence.*

RACINE JUNCTION, Wis., April 11.—Work has been started on a 16 horse power tonneau to be driven by a three-cylinder, vertical, air-cooled motor, by the Wisconsin Wheel Works, which introduced two new cars of novel construction at the recent Chicago automobile show. Ten of the tonneaus are to be put through in the first lot, for six of which orders have been given by persons living in and around this section.

The motor cylinders are to be of five inches bore and to have copper flanges for radiating the heat. The engine will be placed at the front under a long hood, and instead of standing transversely, as in the Franklin, will be disposed longitudinally. A metal scoop below the body frame in front will throw an air current upward around the engine and out through slot openings in the sides of the hood. A fan driven by the motor will further assist to cool the cylinders.

The power plant and body will be carried on the same chassis as is used on the new Mitchell Senior 7 horse power car, which is driven by a single-cylinder, two-cycle horizontal motor.

The car will be unusually long, having a wheel-base of 88 inches, and the body will be proportionately long, having a low, rakish appearance that will be accentuated by a backwardly inclined dashboard conforming to the angle of the seat and other body lines and by a long, tapering bonnet, all combining to convey a suggestion of speediness.

One hundred of the new single-cylinder air-cooled Mitchell Junior runabouts and sixty-five of the two-cycle, water-cooled Mitchell Senior cars are coming through the factory now.

### Club Run Called Off.

April weather caused the practical abandonment of the automobile run from New York to Boston and return this week planned by the Cutler Automobile Club. Threatening skies so kept down the number of intending participants in the event that only four machines appeared at the appointed starting place, on East Fiftieth Street, on Monday morning, at 9 o'clock. These were a 15 horse power Winton touring car driven by Arthur H. Osborn, president of the club; a 16 horse power canopy-top Brazier car driven by Lawrence Dalley; a Locomobile steamer driven by J. W. Noyes, and a Prescott steam runabout driven by Charles Belden. These few members of the club were unwilling to give up the affair altogether, so it was decided to go to New Haven anyway. The four machines accordingly made the run without incident, being joined by another touring car at Stamford, Conn. The club members spent Monday night in New Haven and on Tuesday weather conditions were so bad that the run was abandoned.

It is likely that the run will be attempted later this spring over the same route.

### A Bad Case of Skidding.

*Special Correspondence.*

NEW HAVEN, April 13.—While Edwin Thomas, of this city, secretary of the Democratic State Central Committee, was passing through Hartford on a run from Springfield, Mass., to this city, accompanied by Francis T. Miller, and driving in the car tracks of Asylum street in a heavy touring car that he had recently purchased, a team suddenly appeared in front of him and there promised to be a blockade and collision. The wheels of his car fitted closely in the rails and he was running the machine at a fair speed.

Mr. Thomas at once threw his steering wheels over in an endeavor to leave the tracks, when, quick as a flash, the machine jumped the rails and the rear wheels skidded completely around, the car coming to a stop at the side of the street pointing in the opposite direction. Had the machine held its headway a few feet further, it would have plunged through

the plate glass windows of a store near at hand, having fairly flown from the rails to the sidewalk.

### Collided With Trolley Pole.

*Special Correspondence.*

BUFFALO, April 13.—While riding in his automobile in Tonawanda last Friday J. P. Manning, a millionaire manufacturer of Toledo, O., was thrown twenty feet and narrowly escaped death. His machine was entirely demolished by collision with an iron trolley pole at Groundry Street and the Lehigh Valley tracks.

Mr. Manning was on his way to Niagara Falls in his touring car about 9 o'clock in the evening. He was accompanied by an operator, who was driving the big machine at fast speed. Groundry Street is poorly lighted at the railroad tracks. Some one shouted to the passing automobile and Mr. Manning's chauffeur, thinking a train was bearing down on them, turned the wheel. The sudden turn caused the machine to collide with the trolley pole with terrific force, and both occupants were thrown out, fortunately escaping with but few bruises.

### A. C. A. Route Cards.

A series of route cards from New York to various points within a radius of several hundred miles has been arranged by Secretary S. M. Butler, of the Automobile Club of America, for use of the club members. They include routes from New York to Philadelphia, Lake Hopatcong, Delaware Water Gap, Greenwood Lake, the Berkshire Hills in Massachusetts, Tuxedo, Newburgh, Sag Harbor, L. I., Long Branch, Asbury Park, Point Pleasant, Summit, Morristown, Yonkers, via Jerome and Riverdale avenues; Boston, via Hartford and Springfield; Philadelphia to Washington, Berkshire Hills to Albany and Troy, Berkshire Hills to Green Mountains of Vermont, and Hudson to Connecticut river, through the Berkshire Hills.

### Growing Interest in Scholastic Meet.

Interest in the proposed intercollegiate automobile meet on the Brighton Beach track in June is growing. Besides the Harvard, Yale and Columbia university clubs and the Cutler school club, a group of college automobilists at Princeton university are now organizing a club which will enter contestants in the meet. The American Automobile Association, whose sanction for the meet will be sought, has been informed of the tentative plans for the event and Secretary S. M. Butler has invited the student motorists to meet in the rooms of the Automobile Club of America when they are ready to arrange their plans.

The Century Motor Vehicle Company has shipped an electric delivery wagon to S. S. McClure for delivering magazines around New York city.



## Eliminating Trials.

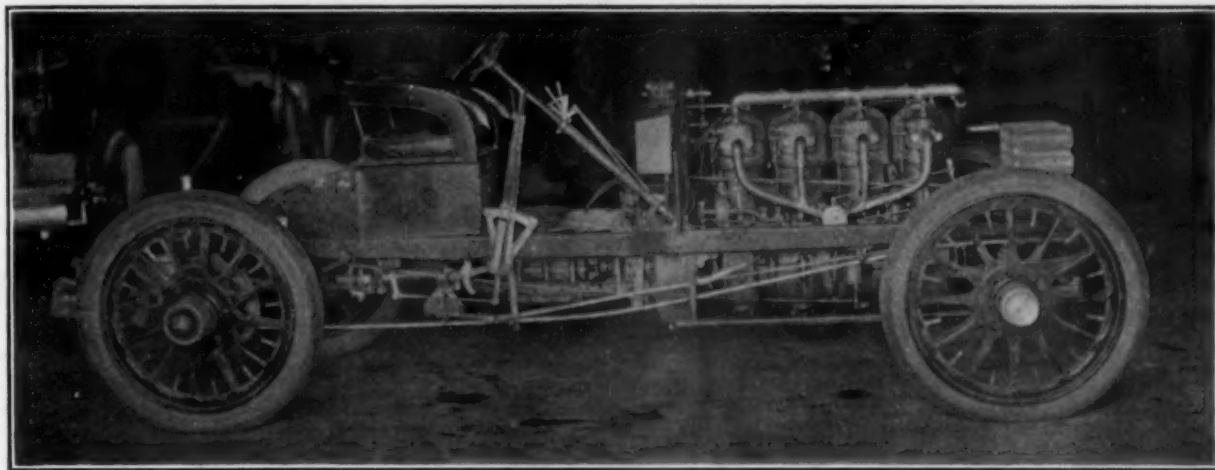
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place. It is expected that Mr. Harkness will have his car in readiness and that it will take part in the trials.

The plans of the committee thus far go

has a second car which would last year have been considered a very advanced racing machine. He has offered both cars for trial, and, if permitted by the committee, will take both to Ireland, testing them over the cup course. If the turns prove to be very sharp and the weather is wet, he will

base of 110 inches; it is about 13 feet 4 inches over all. The frame is formed from 3-16 inch sheet steel, wrought to a channel section over iron dies, as no presses were available when it was built; except for the method of manufacture, it is identical with the modern pressed or stamped frame. Its



INTAKE AND CONTROL SIDE OF MOOERS' BIG PEERLESS RACER, SHOWING ITS GREAT LENGTH.

no further than speed tests on this piece of road. It is as yet unknown whether

use the smaller car, which can be more safely handled on a slippery turn than the

greatest depth is 5 inches and it tapers down at front and rear.



PERCY OWEN AT THE WHEEL OF HIS NEW WINTON CUP RACER, AT GARDEN CITY, LONG ISLAND.

they will order further tests on a track or in hill work.

### MOOERS' LARGE AND SMALL CARS.

In addition to the large and powerful car on which Mr. Mooers places his main reliance in the trials and the cup race, he

larger one and at the same time is relied on for a 70-mile speed. If the conditions are favorable, he will use the large car.

This latter is formidable and imposing in appearance, at least in this country, where the type is a novelty, with a wheel

The wheels are wood artillery, with 34 by 4 inch tires, the bearings having 7-8 inch balls inboard and 5-8 inch at the end. The steering post is raked at an extreme angle, the wheel lying almost against the stomach of the driver as he sits in the box

seat. The springs are semi-elliptic, the front ones 3 feet long and the rear ones 4 feet.

The motor has four cylinders, each 6 by 6 inches, vertical and placed fore-and-aft. The cylinders proper are of steel tubing screwed into heads with which the water-jackets are cast integral. The intake valves, mechanically operated, are all on the right side, with the exhaust valves on the left. A double system of ignition is provided, a jump spark and also a magneto and make-and-break spark. The clutch is of the cone type, the change-gears are of the usual sliding form, and there is a straight drive to the rear axle, which in turn acts on the wheels through its outer ends, thus being relieved of much strain.

The gasoline tank is rectangular and of 25 gallons' capacity, placed above the frame and forming a base for the two seats, side by side, raising them quite high. A larger tank, of 40 gallons' capacity, will be fitted later. The water tank is of but 8 gallons capacity and is hung to the rear cross bar of the frame. The radiator is of the bent tubular type with fins, the tubing now measuring about 20 feet in total length, but this will be increased to 35 feet.

The car has been hurriedly made ready for the trials, and if selected will be returned to the works for final adjustment and finishing. The total weight will be just under the limit of 2,200 pounds, about 400 pounds more weight being carried on the front axle than on the rear wheels.

The smaller car has a wheel-base of 100 inches with a proportionally shorter overall length. The frame is of light channel steel and the wheels are of wood with tires 34 by 3 1-2 inches. The motor has four cylinders, each 4 5-8 by 5 1-2 inches. The car is larger and more powerful than the yellow racing Peerless of last year. It was completed last fall and only tried in private on a half-mile track. Its weight is 1,850 pounds. In both of these cars the men sit near the middle and no wind shields are carried.

#### DETAILS OF HARKNESS'S MACHINE.

As soon as the Gordon Bennett cup race was a certainty Henry S. Harkness, of New York, began the designing of a special racing car for his own use in the trials. This car, which has been very carefully concealed while under construction, has been assembled at the machine shop of D. H. Gill & Sons, in South Brooklyn, under the direct supervision of her owner, who has followed his own ideas, backed up by several years' experience with the Mercedes and other prominent cars. The motor was built in New York, and other parts were made by different specialists.

It has a wheel-base of 102 inches and a long body of canoe shape as used on the Serpollet racing cars, only the head and shoulders of the driver being exposed. The frame is one of the first true

pressed frames made in this country. The wheels have tires 36 by 4 1-2 in the rear, and 36 by 3 3-4 in the front. The number of cylinders is not yet known, but they are in the usual vertical, fore-and-aft position, the motor being very long. The differential is of the bevel gear type, with a spherical case of bronze. There is little clearance between the mechanism and the ground and the weights are kept low. The seats for the driver and mechanic are close to the rear axle, and the fuel tank is placed abaft them.

#### OWEN'S WINTON CAR.

The two cars building at the Winton Works for Messrs. Winton and Owen had been seen by no one other than their drivers and those immediately connected with their construction up to the time of the trials. The cylinders are four in number, and horizontal, lying across the car, and there is a straight drive on a central fore-and-aft shaft and bevel gear. The wheels have 34 inch tires. The two men are seated over the rear axle, and the weight is only about 1,800 pounds.

#### News Notes of Interest.

On the subject of the Ormond-Daytona course, in Florida, Alexander Winton is quoted as saying: "That beach is a superb beach, but it is a beach, after all. Your wheels do not make any marks on it when the car is running, but if the car is left standing awhile the wheels sink two or three inches into the sand. That shows the beach must be slow. When I made my mile in 52 1-5 seconds the beach was slower than usual. The tide had gone out, leaving the beach wet and there was no sun out to dry it. I did the best I could with the 'Buliet,' and I am not apologizing. I could have sent it ten seconds faster on the Clifton Boulevard in Cleveland, though. Why, I developed 100 horse power in the car on the beach, and it does not take 100 horse power to drive a car a mile in 40 seconds."

Figures compiled by one of the largest express companies in Pittsburg, Pa., comparing the expense of horse-drawn wagons and motor trucks, show a saving of about 42 per cent. in favor of the latter. Three wagons and four horses, with salary of three men, repairs, feed and stable expenses, cost \$3,469.40 for a year. One electric truck did the work of the three horse-drawn wagons at a cost, including two men's salaries, of \$1,998.50.

Wilbur Y. Hadlock, a Manchester, N. H., bicycle manufacturer, has the distinction of being the victim in the first automobile case prosecuted by the police of that city. He was summoned into court for driving his machine faster than five miles an hour, and although he claimed his speed to be less than that he was fined \$5 and costs. His case is said to mark the opening of a crusade against automobiles by New Hampshire courts and legislators.

#### SUIT FOR \$180,000 BROUGHT AGAINST THE LOCOMOBILE CO.

A summons and complaint have been served in a suit for \$180,000 brought against the Locomobile Company of America by the Warren-Burnham Company, a New Jersey corporation, in the Supreme Court of New York. The suit grows out of a series of financial transactions between W. R. Warren, Amzi L. Barber, former president of the Locomobile Company, and Samuel T. Davis, present president of the latter company, who, with Mr. Barber, owns controlling interest in the automobile concern.

The suit hinges upon a contract between these parties made on January 2, 1902, by the terms of which the Warren-Burnham Company agreed to buy \$100,000 worth of the preferred stock of the Locomobile Company at par. The Locomobile Company agreed to deliver \$100,000 of its preferred stock and also \$100,000 of its common stock, according to the bill of complaint, which further states that the Warren-Burnham Company had at the time of making the contract invested \$200,000 in the Overman Automobile Co., and that it was therefore agreed that the interests of the Warren-Burnham Company in the Overman Company were to be sold to the Locomobile Company.

The Locomobile Company, having previously secured rights to the Overman patents and purchased the interest of A. H. Overman in the Overman Automobile Co., the Locomobile Company agreed to assume all the risks and obligations of the Overman concern, it is charged. The consolidation or merging of the automobile companies followed. It is now charged that there was a misunderstanding of the financial condition of the companies prior to the purchase of stock by the complainant, the Warren-Burnham Company, and that the latter is damaged to the extent of \$180,000, which it is seeking to recover.

Representatives for the defendants deny the charges and state that the suit is without a legal basis. The case has been stayed by a motion to require the Warren-Burnham Company to file bonds for costs of the suit, as it is a foreign corporation.

Cuyahoga County, Ohio, of which Cleveland is the county seat, is making great strides in the improvement of its country roads, according to the *Cleveland Press*. This was made possible by the passage of the Dodge road law. More than thirty-three miles of road were improved before the passage of the Dodge law. Since its passage 32 2-3 miles of improvement have been projected. Construction on 3 1-2 miles of road is going on at the present time. The County Commissioners have charge of all road improvement, and hardly a week passes but a delegation of farmers petitions for improvements.